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Community Profile

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Prepared for:
Golden Gate Bridge Phase I Lead Cleanup Remedial Action Site

Prepared by:
Golden Gate Bridge, Highway and Transportation District
January 1995

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C737



MEMORANDUM

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DATE: January 19, 1995
TO: Head Librarian, San Francisco Public Library
FROM: Mary C. Currie, Public Information Officer
RE: Golden Gate Bridge Lead Cleanup Program

Please place the attached "Community Profile" prepared as part of the Golden Gate Bridge Lead Cleanup Program in your government documents section and make it available for public review by requested.

Thank you for your assistance in this matter. If you require any further information, please contact me at 415-257-4548.

cc: Carol Northrup, DTSC
C/PI

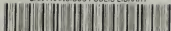


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INTRODUCTION

INTRODUCTION

The *Community Profile* has been prepared by the Golden Gate Bridge, Highway and Transportation District (District) to provide an overview of the Golden Gate Bridge Lead Cleanup Program. The Profile is intended to assist the State of California, Environmental Protection Agency, Department of Toxic Substance Control (DTSC) in developing appropriate public participation activities for the Lead Cleanup Program. The activities developed will be supported by the District's Public Information Department.

In 1992, the District initiated a project investigating lead contamination under and adjacent to the Golden Gate Bridge which resulted in the preparation of a *Remedial Action Plan* to remove soil containing elevated concentrations of lead in specific areas under and directly adjacent to the Golden Gate Bridge. After the initial soil testing identifying areas containing high concentrations of lead, DTSC, the agency administering and enforcing the provisions of the Hazardous Substances Account Act, section 25300 et seq. governing releases of hazardous substances, issued a Fence and Post Order on July 17, 1992. The Fence and Post Order, issued to the District, the National Park Service, Golden Gate National Recreation Area (GGNRA) and the U.S. Army, Presidio of San Francisco, required the District to protect public health by closing areas to the public where the elevated concentrations were found. GGNRA and U.S. Army own and administer the lands upon which the contaminated soils were found and therefore, were named as participating parties along with the District. After the District's compliance with the Fence and Post Order, efforts have been focused on developing a comprehensive phased Lead Cleanup Program for the areas under and adjacent to the Golden Gate Bridge.



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PROJECT SUMMARY

PROJECT SUMMARY

I. Proposed Project

The Golden Gate Bridge (GGB) Lead Cleanup Program has been separated into two remedial action phases in order to expedite remedial action specifically in areas associated with the GGB Seismic Retrofit Project. The Phase I Remedial Action Plan will provide for the removal of soil containing elevated concentrations of lead in areas within the Seismic Retrofit Project Area of Potential Effect (APE) adjacent to and beneath the north and south approaches to the GGB (see Figures A & B). The implementation of the Phase I Remedial Action Plan will result in the reduction of human health risk to acceptable levels for employees, contractors and consultants participating in the GGB Seismic Retrofit Project and for recreational and other public uses.

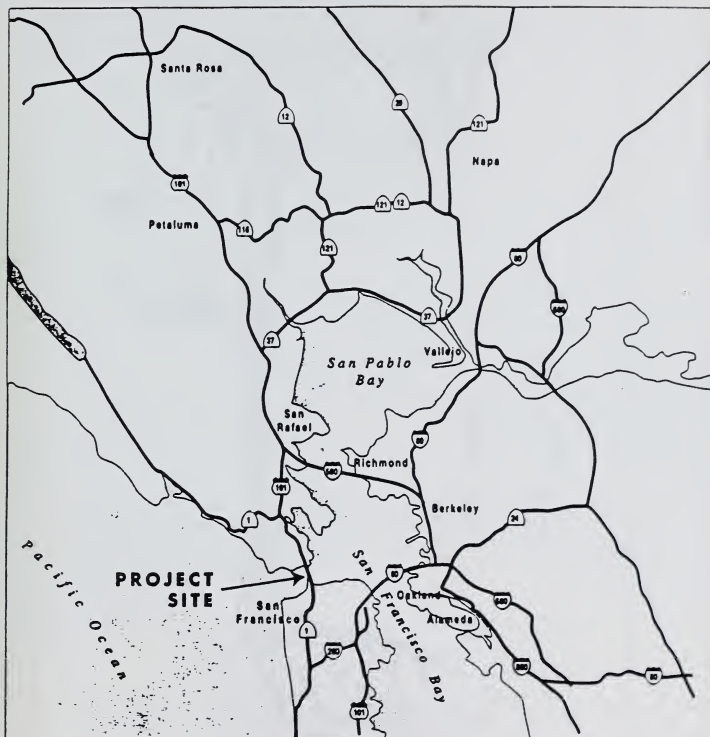
Upon completion of the Phase I Remedial Action Plan, Phase 2 activities will focus on characterizing lead contamination in areas outside of those areas identified for cleanup under Phase I, and will determine appropriate cleanup goals, and developing a Remedial Action Plan. Both human health and ecological risk assessment will be required in determining an appropriate cleanup goal for Phase 2.

The GGB Lead Cleanup Program is being phased in order to accommodate the scheduling and staging requirements of the GGB Seismic Retrofit Project. Although built before the advent of modern seismic engineering, the GGB has performed well in all earthquakes to date. While the 1989 Loma Prieta Earthquake was no exception, the 7.1 temblor initiated a project which is likely to be the greatest and most significant in the life of the Bridge: the GGB Seismic Retrofit Project. This five year, \$150 million project is scheduled to begin construction in January 1995, and is essential to structurally strengthen the GGB and ensure public safety. The Phase I Lead Cleanup Remedial Action Plan is an integral part of the site preparation of the GGB Seismic Retrofit Project, and must be completed prior to any excavation in the area to provide a safe working environment for construction workers. The Lead Cleanup Program/ Seismic Retrofit Project site preparation will be performed prior to and separately from the Seismic Retrofit excavation. Seismic Retrofit excavation may then proceed without restriction.

II. Phase I Lead Cleanup Program Site Description

When the Golden Gate Bridge was being constructed in the 1930's the protective coating for structural steel consisted of 68% red lead and 32% of a synthetic vehicle. In 1965, due to severe corrosion, a paint replacement program commenced and is scheduled to be complete in early 1995. The program was designed to completely remove, by sandblasting, all original red lead primers, rust, mill scale, replacing it with an inorganic zinc silicate primer and an acrylic topcoat.

In 1992, surface soils under both approaches were found to contain lead at levels sufficient to close portions of the site to the public (from 850 to 61,000 ppm, sampling by GGBHTD).

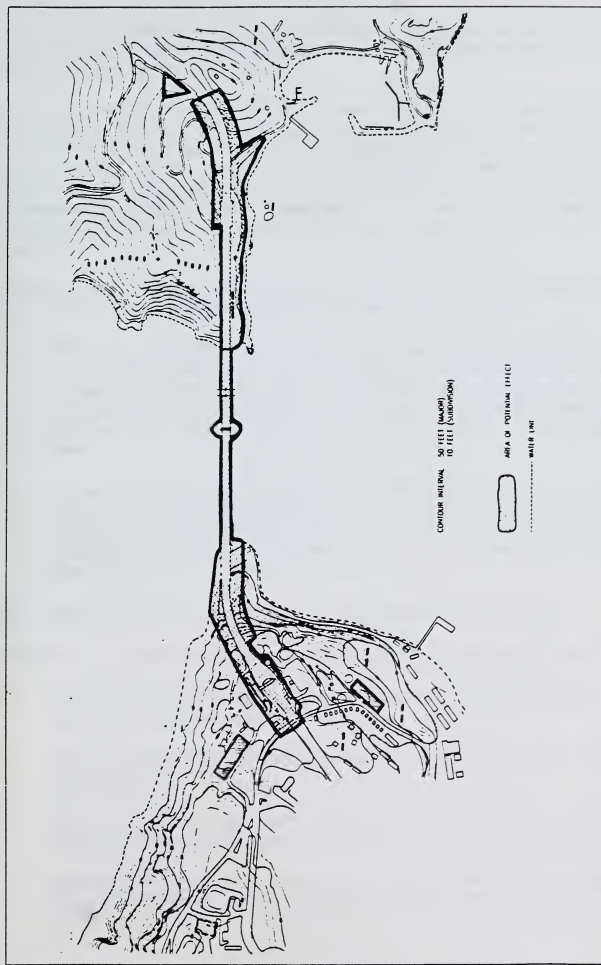


No Scale

SOURCE: Environmental Science Associates

Golden Gate Bridge Seismic Retrofit / 910530 ■

Figure A
Site Location Map



SOURCE: Hammond, Jensen, Williams & Associates, Inc.

These areas were closed to the public in July 1992 under a Fence and Post Order. Preliminary sampling and testing of soils in the vicinity of the Golden Gate Bridge approaches showed the following ranges in lead concentrations:

On the south side of the Bridge, lead concentrations range from a low of less than 10 ppm for grass clippings samples to a high of 3900 ppm for lead in the soil at one of the Fort Point sites. On the north side, the results for a total of fifteen samples range from a low of 13 ppm for lead at the Kirby Cove beach located within GGNRA to a high of 1300 ppm for lead at the Horseshoe Cove pocket beach located within the Fort Baker Military Reservation. A more comprehensive sampling program was undertaken in 1994 as part of Phase I Remedial Investigations. This work was conducted by the District's consultant ENTRIX, Inc. of Walnut Creek, Ca.

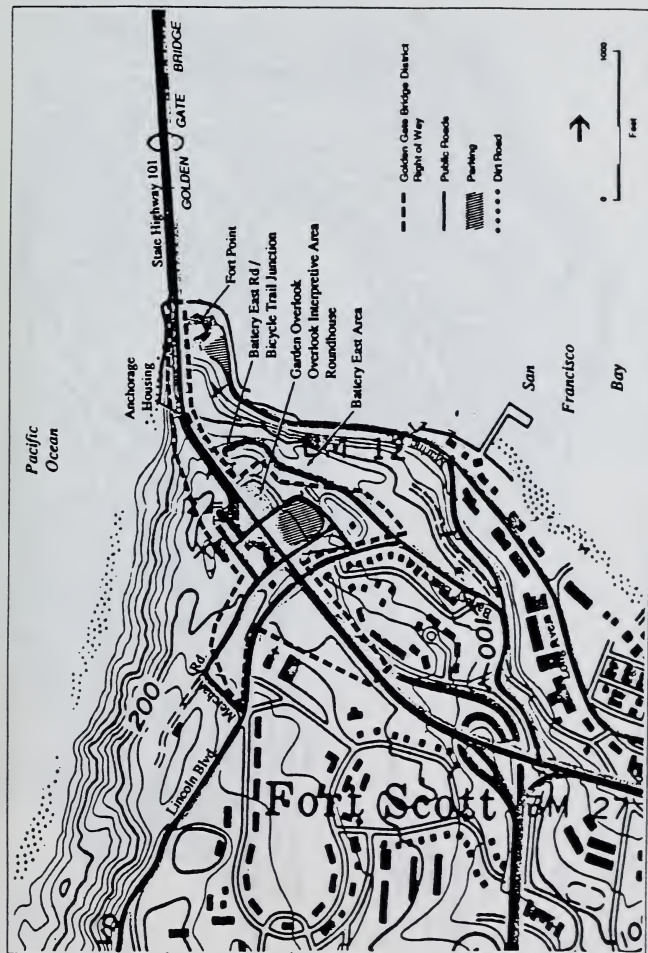
The Phase I Lead Cleanup Remedial Action Area is located in two specific areas within the Seismic Retrofit Project Area as follows and are shown in Figure C and D:

- On the south side of the GGB, the Phase I Lead Cleanup Remedial Action Site is located below and adjacent to the south approach to the GGB on lands administered by the Golden Gate National Recreation Area (GGNRA) and on lands formally under the jurisdiction of the U. S. Army Presidio in the City and County of San Francisco at the Fort Point National Historic Site and administered by GGNRA commencing October 1994.
- On the north side of the GGB, the Phase I Lead Cleanup Remedial Action Site is within the Lime Point area of East Fort Baker in the County of Marin. The site was owned by the Department of Defense with ownership scheduled to be transferred to the Department of the Interior on October 1, 1994, and is under permit to Golden Gate Bridge, Highway and Transportation District.

III. Phase I Lead Cleanup Remedial Action Plan Summary

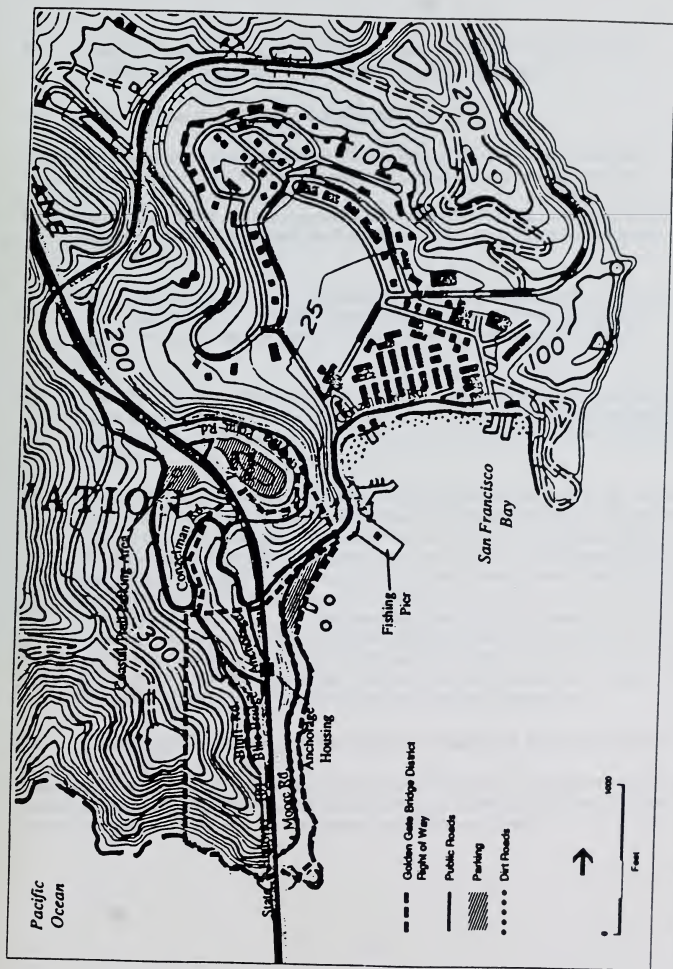
The Phase I Lead Cleanup Remedial Action Plan will consist of the following actions:

- Removal of surface sand and underlying soil in Seismic Retrofit Project construction and staging areas as necessary to meet cleanup goals;
- Removal of surficial paint chips and sand along the perimeter of all Seismic Retrofit Project areas;
- Removal of roadbase along unpaved Seismic Retrofit Project access roads, and rebuilding those road sections with clean base, as necessary to meet cleanup goals;
- Stabilization treatment of the material removed from Seismic Retrofit Project areas;
- Placing the stabilization treated material into a temporary stockpile; and



SOURCE: State of California Department of Transportation,
Environmental Science Associates, Inc.

Golden Gate Bridge Right of Way 9/13/90
Figure C
Southern Approach
Golden Gate Bridge District Right of Way



SOURCE: State of California Department of Transportation,
Environmental Science Associates, Inc.

Golden Gate Bridge Retractions 191-350

Figure 2

Northern Approach
Golden Gate Bridge District Right of Way

- Placing the stabilized material as backfill into Seismic Retrofit Project foundation excavations after completion of Seismic Retrofit foundation work.

IV. Description of Adjacent Land Uses

Areas directly adjacent to the Phase I Lead Cleanup Remedial Action Area include both recreational and historic properties of national and international prominence including:

- Golden Gate Bridge visitor areas on the southeast side of the GGB adjacent to the Toll Plaza including the East Parking Lot, Roundhouse Gift Center, Gardens and Scenic Overlook areas.
- Golden Gate Bridge operations and maintenance facilities located on the southwest side of the GGB include the Toll Plaza, District Administration Building, and satellite buildings housing Bridge Maintenance, Data Processing, Engineering and District Services.
- Historic Fort Point is a National Historic Site and a contributory to the Presidio of San Francisco which is a National Historic Landmark. Fort Point is listed on the National Register and is a Civil Engineering Landmark, but is not designated a State of California Landmark.
- Fort Baker Military Reservation includes a waterfront area at the foot of the northeast side of the Golden Gate Bridge and below the area known as Vista Point. Fort Baker is listed on the National Register of Historic Places as part of the Forts Baker, Barry and Cronkite Military Reservation dating back to the mid-1800s. The majority of the Fort Baker site is not located adjacent to the Phase I Lead Cleanup Area of Potential Effect. One of the most notable features within Fort Baker is Lime Point, located directly east of the Golden Gate Bridge. This small peninsula houses the U.S. Coast Guard Light Station and may be reached via a hiking trail. Roads within the Military Reservation are used by bicyclists who commute across the Bridge, or wish to ride down to the waters edge on the North side of the Bridge. This area is presently closed to the public under the Fence and Post Order described in the Introduction of this report.

V. Demographics of the Community in which the Site is Located

The Phase I Lead Cleanup Remedial Action Site is not located within a specific community as it is located on federal lands. As described above, the Phase I Lead Cleanup Remedial Action Area is comprised of lands used for employment, recreation and tourism.

VI. Visibility of Site to Neighbors

The Golden Gate Bridge can be seen from around the Bay. However, the Phase I Lead Cleanup Remedial Action Area is visible from relatively short distances from only a few locations. The Phase I Lead Cleanup Remedial Action Area will not be visible from the GGB roadway. On the south side, the Lead Cleanup Remedial Action Area adjacent to Fort Point will be visible to Fort Point visitors and from above at specific overlook areas located within the GGB visitor areas. The vast majority of potential viewers at or adjacent to the GGB will not view the Phase I Lead Cleanup Remedial Action Area as they will viewing the area from too great a distance. This would include motorists, pedestrians on the Bridge, people viewing the GGB from residential and commercial areas in San Francisco, Marin County or the East Bay.

LOCAL INTEREST

The following is a summary of local interest relative to the GGB Lead Cleanup Program. To date, local interest has been focused on the Lead Cleanup Program as a whole, rather than one particular phase of the project.

I. Contacts and Interactions with Community Members

Mr. Michael Herz of the San Francisco Bay Area organization Baykeeper has spoken with District staff about the Lead Cleanup Program. Baykeeper expressed interest in the potential impacts of lead contamination from sites under and adjacent to the Bridge on the Bay itself. Primary concerns included potential impacts to fishing specifically at the East Fort Baker site located on the north side of the Bridge and potential impacts to the area watershed. Numerous vendors and environmental consultants specializing in remediation services have contacted the GGB District's Environmental Health and Safety Manager Kary Witt regarding the Lead Cleanup Program. These contacts focused on possible opportunities for business relationships with the District relative to the Lead Cleanup Program.

II. Media Coverage

Media coverage began in March 1992 and has continued periodically since. Two Bay Area newspapers, the *San Francisco Independent* and the *Marin Independent Journal*, have been the primary media contacts. Names of media contacts with which District staff are in contact are listed below under Key Contacts. *Appendix B* includes media clips to date.

III. Government Contacts

In addition to the government agencies which are presently working together to plan and implement a remedial action plan, the California Coastal Commission has contacted GGB staff for general information about the overall GGB Lead Cleanup Program. The government agencies that the District is coordinating with are listed below under key contacts.

IV. Key Contact List

The following is a list of key contacts relative to the GGB Lead Cleanup Program to date:

Golden Gate Bridge, Highway and Transportation District

- Board of Directors, GGBHTD (*Appendix A*)
- Mr. Carney J. Campion, General Manager
- Mr. David Miller, Attorney
- Mr. Kary Witt, Environmental Health & Safety Manager/Project Manager Lead Cleanup Program

- Mr. Robert Warren, Bridge Manager
- Mr. Merv Giacomini, District Engineer
- Ms. Mary C. Currie, Public Information Officer

GGB District Consultants

- Mr. Keith Howard, Cooper, White & Cooper, Attorney
- Mr. Peter Hendricks, Project Manager, ENTRIX, Inc.

Governmental Agencies

- Mr. Brian O'Neill, Superintendent GGNRA
- Ms. Nancy Hornor, GGNRA
- Ms. Sue Cone, San Francisco Department of Public Health
- Representatives from the U.S. Army, Presidio

State of California, Environmental Protection Agency, Department of Toxic Substance Control Staff

- Ms. Barbara Cook, Branch Chief
- Ms. Annina Antonio, Associate Hazard Materials Specialist
- Ms. Carol Northrup, Public Participation Coordinator

Media Contacts

- Ms. Susan Herbert, *San Francisco Independent*
- Mr. John Moses, *Marin Independent Journal*
- Mr. Alex Neill, *Marin Independent Journal*

Elected Officials

- Contact has been made with U.S. Senator Barbara Boxer and U.S. Senator Diane Feinstein relative to the funding needed and the critical nature of the timing of the GGB Seismic Retrofit Project.

**PAST PUBLIC
INVOLVEMENT ACTIVITIES**

PAST PUBLIC INVOLVEMENT ACTIVITIES

I. Opportunities for Public Comment to Date

Since the GGB Lead Cleanup Program was initiated in 1992, opportunities for public comment have occurred at a number of regularly scheduled public meetings including:

- Board of Directors Meetings
- Building and Operating Committee Meetings
- Finance Committee Meetings

All meetings of the Board of Directors and associated standing committee meetings are open to the public. Further, all public meetings provide a formal time period allotted for public comment prior to and at the close of all meetings. From May 28, 1992 through January 5, 1995 this matter has been agendized before the Board and its standing committees 23 times. Although the GGB Lead Cleanup Program has been discussed during "Closed Sessions" at a number of these meetings, the public is still afforded the opportunity to hear the summary of the "Closed Session" and then comment on the subject. The GGB Lead Cleanup Program has been discussed in "Closed Session" because of the potential for litigation that exists surrounding this matter. To date, no member of the public has made verbal or written comments relative to the Lead Cleanup Program at these meetings. Minutes of meetings may be reviewed by at the Office of the Secretary of the District located at the Administration Building, Toll Plaza, Golden Gate Bridge.

In addition to these Board and committee meetings, numerous meetings and discussions relative to the GGB Lead Cleanup Program have taken place with District and Golden Gate National Recreation Area staff since May of 1992.

On October 25, 1994 District staff made a presentation to the Presidio Restoration Advisory Board regarding Bridge operations including the planned seismic retrofit project, toll plaza expansion and plans relative to the Presidio Master Plan. As part of the seismic retrofit presentation, a brief overview of the Lead Cleanup Program was given. Comments focused on the anticipated cleanup levels and areas to included in the remediation. The Advisory Board requested that they be included in the public comment process when the Remedial Action Plan is released for public comment.

II. Key Issues and Concerns

The issues raised to date concerning the GGB Lead Cleanup Program include the following:

- What is the extent and impact of the lead contamination on public health and safety?
- When will the lead be removed?
- What will the remedial action cost?
- What is the impact of Lead Cleanup Program on recreational use?

At this time, several issues may become concerns in the future:

- What is the timing of the remediation for Phase I and Phase 2?
- What are the cleanup goals selected for Phase I and Phase 2?

As several nationally and regionally recognized environmental groups are based in the Bay Area, it is expected that concerns may arise from these groups during the public participation process.

**RECOMMENDED
PUBLIC PARTICIPATION ACTIVITIES**

RECOMMENDED PUBLIC PARTICIPATION ACTIVITIES

As Public Participation is a vital element in the overall success of the GGB Lead Cleanup Program, a Public Participation Plan will be developed by DTSC. Depending on the level and type of interest and issues raised, the Public Participation Plan may be tailored to address the anticipated audiences and issues. At this time it is anticipated that the following Public Participation activities may be implemented:

- Development of a comprehensive mailing list for the project.
- Hold one or more Community Open House Meetings when the Draft Remedial Action Plan is available for public comment.
- Preparation and distribution of a project Fact Sheet at the community meeting (s) and to the comprehensive mailing list prior to the meeting.
- Prepare and distribute press releases/media alerts relative to Community Meetings regarding the Lead Cleanup Program and its associated schedule of activities.

The Preliminary Mailing List for the project is contained in *Appendix C* and to date includes the following categories per request from DTSC:

1100 Elected Officials

- 1100 Mayors (cities in Marin and SF)
- 1200 Marin County Supervisors
- 1200 San Francisco County Supervisors
- 1400 Members of Congress

2000 Responsible and Affected Agencies

3000 Interested Agencies

- 3000 Marin County Staff and Other Local Staff
- 3100 San Francisco City and County
- 3200 Various Agencies - 1991 Seismic Retrofit Agency Scoping List

5000 Community Members

- 5100 Individuals on the GGB District Secretary's Public Meeting Mailing List
- 5200 Organizations on the GGB District Secretary's Public Meeting Mailing List

6000 Business Groups

- 6100 Chambers of Commerce
- 6300 Project Consultants

7000 Interested Groups

- 7100 Environmental Groups
- 7200 Tour Bus Companies

8200 DTSC Staff

9000 Media Contacts

- 9100 Media General
- 9200 Local Print
- 9200 Culturally Diverse Print
- 9300 Radio, SF, Marin, Sonoma

APPENDIX A
BOARD OF DIRECTORS
Golden Gate Bridge



GOLDEN GATE BRIDGE HIGHWAY AND TRANSPORTATION DISTRICT

OFFICE OF THE SECRETARY

ROSTER OF THE BOARD OF DIRECTORS

January 13, 1995

ROBERT MCDONNELL
President
(San Francisco)

Laborers' International
Union of North America
AFL-CIO Local Union No. 261
3271 18th Street
San Francisco, CA 94110
415-826-4550

JOHN E. FRASER
Second Vice President
(Del Norte County)

P.O. Box 258
Gasquet, CA 95543
415-921-5858

BOB ROSS
First Vice President
(San Francisco)

395 9th Street
San Francisco, CA 94103
415-861-5019

ANGELA ALIOTO
(San Francisco)

City Hall, Room 235
San Francisco, CA 94102
415-554-7788

C. PAUL BETTINI
(Marin County)

1017 E. Street
P.O. Box 151079
San Rafael, CA 94915-1079
415-454-6454

ALBERT J. BORO
(Marin County)

City of San Rafael
1400 Fifth Avenue
P.O. Box 151560
San Rafael, CA 94915-1560
415-485-3074

JAMES R. BRONKEMA
(San Francisco)

405 Davis Court, Suite 2008
San Francisco, CA 94111-2446
415-434-1424

HAROLD C. BROWN, JR.
(Marin County)

Marin County Civic Center, Room 315
San Rafael, CA 94903
415-499-7331

JAMES C. EDDIE
(Mendocino County)

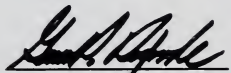
9401 Main Street
Potter Valley, CA 95469
707-743-1534

GARY GIACOMINI
(Marin County)

Marin County Civic Center, Room 315
San Rafael, CA 94903
415-499-7331

ROSTER OF THE BOARD OF DIRECTORS
JANUARY 13, 1995/PAGE 2

JAMES L. HARBERSON (Sonoma County)	Sonoma County Administration Building, Room 100A 575 Administration Drive Santa Rosa, CA 95401 707-527-2241
WILLIE B. KENNEDY (San Francisco)	City Hall, Room 235 San Francisco, CA 94102 415-554-5734
STEPHAN C. LEONOUKAKIS (San Francisco)	923 Folsom Street San Francisco, CA 94107 415-495-3909
MAUREEN MIDDLEBROOK (Sonoma County)	807 Spring Street Santa Rosa, CA 95404 707-584-4200
CAROLE MUGDEN (San Francisco)	City Hall, Room 235 San Francisco, CA 94102 415-554-4033
JOHN J. MOYLAN (San Francisco)	2985 24th Avenue San Francisco, CA 94132 415-731-6882
KEVIN SHELLEY (San Francisco)	City Hall, Room 235 San Francisco, CA 94102 415-554-4005
VIRGINIA H. SIMMS (Napa County)	1130 First Street, Suite 210A Napa, CA 94559 707-257-2389
BRIAN M. SOBEL (Sonoma County)	913 Wood Lane Petaluma, CA 94954 707-778-4345


Gene P. Rexrode
Secretary of the District

GPR/vnl

APPENDIX B
MEDIA CLIPS 1992 to 1994

Millions Needed For Lead Cleanup

By Susan Herbert

The costs of removing lead-contaminated soil from the parklands under the Golden Gate Bridge will soar into the millions of dollars, according to a Golden Gate Bridge, Highway and Transportation District official.

The first two phases of cleanup operations will cost

"millions of dollars as opposed to [the expected] hundreds of thousands," said Kary Witt, the district's environmental and safety manager.

The first phase of the remedial action must be completed before the district begins its imminent \$125 million project to retrofit the span

See Lead, page 5

LEAD: Golden Gate Bridge Cleanup Will Cost Millions

from page 1

seismically. Without the remediation, construction workers could be at risk for lead poisoning.

During the first phase of cleanup, lead contamination will be removed from areas immediately under the bridge, as well as from all areas that will be used for access, staging, or construction during the seismic work.

The second phase of the cleanup will address the areas outside the seismic retrofit project area. More tests will be conducted to determine the full extent of the lead poisoning.

The bridge district's board of directors, on June 30, approved an additional \$75,000 to complete planning for the first phase.

A public hearing on phase one of the remedial action plan is scheduled for October 1. Actual work on the cleanup is expected to continue through next year.

The costs are being borne by the bridge district. However, since many jurisdictions, landowners, and easements are granted on the land around the bridge, responsibility for costs is still to be determined.

"We are currently paying the bills, but we hope the Army and GGNRA [Golden Gate National Recreation Area] will help in the costs," said Witt.

The costly cleanup is the result of an April 1992 San Francisco Independent investigation into lead contamination. Staff members took samples from soil depths of between

3 and 8 inches in six areas near or on trails or scenic overlooks. The samples were analyzed by a San Francisco laboratory, and results showed extraordinarily hazardous levels of lead in some areas.

Fallout from the bridge, which has been undergoing a complete removal of lead-based paint for 20 years, is suspected of contaminating the parkland, which has shown lead levels many times the 1,500-parts-per-million limit set by the state's Environmental Protection Agency. Paint chips were clearly visible in the soil under the bridge at both the north and south anchorages.

In response to the Independent's report, state officials fenced off areas and trails under the world-famous span on both the Marin and San Francisco sides in May 1992 and conducted their own studies of the contamination.

California health officials consider soil containing lead levels of 500 parts per million to be hazardous and recommend that the lead be sealed off or removed to protect children, who can easily be poisoned if they ingest lead dust through breathing or hand-to-mouth contact.

Lead is especially hazardous to children aged 5 and under. A small amount of lead — as little as a few grains of sand — can do irreparable damage to developing nervous systems.

MARIN IJ 7/29/93

Bridge district to hire consultant for cleanup

Lead contamination tarnishes Golden Gate

By Alex Neill

Independent Journal reporter

Golden Gate Bridge District officials are jumping through bureaucratic hoops to start the cleanup of toxic contamination around the bridge.

Kary Witt, district environmental and safety officer, said the district soon will hire a consultant to draft a plan to guide it through the maze of government regulations involved in cleanup of contamination caused by lead-based paint sandblasted from the bridge.

Dangerously high levels of hazardous waste were found in the spring of 1992 in surface soils under the bridge, including the area near the Marin tower at Lime Point.

Among the findings:

- Soil under the Marin tower was found contaminated at 61,000 parts per million. The federal hazardous waste limit is 1,000 ppm.

- A paved trail on the east side of the bridge on the south approach had a reading of 2,100 ppm.

- An access road under the north approach vista road showed a reading of 4,600 ppm.

- A paved road under the bridge on the Marin side had a reading of 10,500 ppm.

- A proposed picnic area on the San Francisco side of the bridge read 790 ppm.

The findings led officials from the bridge district and National Park Service, which manages federal land adjacent to the span, to close trails and other public areas on both ends of the bridge.

Howard Levitt, chief of public affairs for the Park Service, said areas considered possibly dangerous have been fenced off and posted with warning signs.

"I think these are completely reasonable precautions," he said.

Levitt said the top concern was that chil-

Dangerously high levels of hazardous waste were found in surface soils under the bridge.

dren may ingest some of the contaminated soil.

The areas where the precautions have been taken include Lime Point on the Marin side. Bicyclists here are being kept to the paved road access to the bridge. A portion of the Fort Point area near the bridge toll plaza also has been fenced off.

Authorities say lead-based paint and primers sandblasted from the bridge were the likely source of the contamination.

Witt said the lead-based paint was last used in the early 1970s, and the district has since switched to a safer inorganic zinc primer with an overcoat.

The bridge district's finance and operating committee recently considered approving a \$381,000 contract with Entrix Inc. of Walnut Creek to serve as environmental engineering consulting firm to draft a cleanup plan. The committee delayed action, however, with members saying they wanted more information in several areas, including overall cost of the project, alternate methods of cleanup and a determination of how much of the contamination was due to bridge paint and how much to emissions from vehicles that cross the span.

Witt said overall cost and length of the project could not be determined until a cleanup plan had been drafted, a process he said will likely be completed by January 1995.

MARIN IJ 7/29/93

MARIN IJ 9/26/93

Contract for cleanup plan

The Golden Gate Bridge District has awarded a \$310,453 contract to a Walnut Creek company to develop a contaminated-soil-cleanup plan.

Dangerous levels of hazardous wastes were discovered in April 1992 in soil under the bridge, including the area near the Marin tower at Lime Point.

Officials from the bridge district and the National Park Service, which manages federal land adjacent to the span, closed some public areas on both ends of the bridge.

Entrix Inc., the environmental engineering company awarded the contract to draft a cleanup plan, is expected to return with one within 14 months, said Mary Currie, a spokeswoman for the bridge district.

Bridge Cleanup Cost Triples

Higher estimate
stalls contract for
lead removal

By John R. Moses
and Susan Herbert

A plan to clean up lead contamination under the Golden Gate Bridge hit a snag last week when budget-conscious bridge officials learned that the project's initial phases will cost roughly three times more than expected.

The district's Building and Operating Committee learned on July 2 that a job they thought would cost \$140,000 now weighs in at \$381,498. The operations panel sent the matter to the district's finance panel, which decided to postpone the cleanup contract until July 22

for further study.

As first reported in the *San Francisco Independent*, a probable combination of bridge painting operations and auto emissions over more than 50 years has left federal parkland below both ends of the scenic span contaminated with high levels of lead.

"We are primarily interested in protecting the health and safety of the public," said Mary Curry, bridge district public information officer. "The staff is committed to get the contract going."

Curry said the cleanup may take as long as two years to accomplish.

Directors already facing tough choices on which capital projects to fund and which to defer would have to find an

See GG Bridge, page 2

GG BRIDGE: Lead Cleanup Costs Triple

from page 2

extra \$241,498 to fund the first two phases of the cleanup. A \$7.3 million budget shortfall by the end of 1998 has been projected for the district.

The district's Finance and Auditing Committee, in discussing the unexpectedly higher contract cost, also discussed the need to have an overall cost estimate for the cleanup. The contract before them does not include any actual cleanup.

In addition, the committee discussed the need to find out if the bridge alone is responsible for the contamination, and the possibility of

'We just can't go in and dig up, bulldoze or pave over the site: It's contaminated land, but it is also a scenic area and we can't block or impair the view.'

—Peter Hendrick,
ENTRIX employee

involving the U.S. Army and Golden Gate National Recreation Area in the cleanup plan.

The finance committee, at the request of its chair, Director Steven Leonoudakis, took the matter into closed session to discuss with attorney David Miller the potential for litigation involving the cleanup plan.

The proposed contract with

ENTRIX, Inc. calls for the Walnut Creek-based company to evaluate the site and its risks, recommend cleanup levels and produce the required regulatory documents for the state.

After settling cleanup levels with the state, ENTRIX Inc. would then have to decide how to clean up the lead, design a cleanup plan acceptable to state toxics regulators and design the bid specifications so the district can hire a toxic cleanup contractor.

The contaminated land, at Fort Point in San Francisco and Lime Point in Marin County, was fenced off last summer by order of the state's Department of Toxic Substances Control, and has remained closed.

Preliminary tests performed for the Golden Gate Bridge, Highway and Transportation District last year confirmed that the land is contaminated.

Peter Hendrick of ENTRIX calls the job politically and technologically difficult.

"We just can't go in and dig up, bulldoze or pave over the site," Hendrick said. "It's contaminated land, but it is also a scenic area and we can't block or impair the view."

Clarification

Warren Hinckle's July 13 column was not intended to imply that the group Homes Not Jails was involved in any disturbances on Polk Street.

GG Bridge Weighs Lead Cleanup Bids

Four firms submit proposals to draw abatement plans

By John R. Moses

SAN FRANCISCO — Golden Gate Bridge officials set May 12 as the date they will open proposals from four environmental firms seeking to draft a cleanup plan for lead-tainted parkland below both ends of the span.

A subcommittee of the Golden Gate Bridge, Highway and Transportation District's

board of directors will hear an update on the lead cleanup process today (Friday, May 7) at 10 a.m. in the district's Administration Building at the Toll Plaza.

The district has no cost estimates yet on what it will take to clean up the lead, which was deposited in the soil by bridge sanding operations and years of accumulated auto emissions. The project bidders walked through the fenced-off areas last month with district staff before making their proposals.

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GG Bridge

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District Safety and Environmental Coordinator Kary Witt said Thursday he hopes to have a contractor in place by June 1. The district will select a contractor based on technical ability, not cost, and negotiate a cost ceiling based on the work the successful bidder proposes, Witt said.

The first phase of the cleanup begins when a contractor is selected to thoroughly test the soil and determine the extent of contamination. The contractor selected will draw up a plan to remove or seal contaminated areas confirmed through further soil testing.

Then the bridge district must submit a cleanup plan to the state's Department of Toxic Substances Con-

trol, a division of the state Health Department that has jurisdiction over toxic cleanups.

Paint chips and lead contamination well above federal and state limits exist in sand below some parts of the span to a depth of eight inches according to tests performed last May by the *San Francisco Independent*.

The district's initial tests confirmed that the land was contaminated, and federal authorities tested surrounding areas last June to determine how far bridge sanding dust was carried by winds.

Land below the bridge's north tower was fenced off June 1, 1992, and the district began fencing of Lighthouse Keeper's Bluff in San Francisco. The contaminated land has been completely fenced off since Aug. 11, 1992.

/San Francisco Independent/Sunday Edition/March 14, 1993

GG Bridge District Takes Lead Cleanup Proposals

By Susan Herbert and John R. Moses

SAN FRANCISCO — The Golden Gate Bridge, Highway and Transportation District directors are taking the first steps leading to the cleanup of lead-contaminated parkland at the bridge site.

On Friday, they authorized the general manager to seek bids from qualified consultants to determine the scope of soil contamination below the bridge approaches and make recommendations on cleanup.

After the *San Francisco Independent* reported the lead contamination in May, the bridge district fenced off the areas under and around the span's north and south approaches and posted signs warn-

ing tourists and joggers of the health hazards.

"I'm hoping that the cleanup will start in May or June," said Kary Witt, the bridge district's safety and environmental coordinator.

A consultant's study will cost the district more than \$100,000 and the cleanup itself will "probably be significantly more than that, but I wouldn't venture a guess now," said Witt.

In May, the *Independent* paid for a series of soil tests that found severe contamination in areas around the bridge, including hiking trails and overlooks.

The bridge district, together with the Golden Gate National Recreation Area (GGNRA), conducted further soil surveys, which confirmed

the *Independent's* findings.

Funding for the cleanup is included in the proposed bridge division's capital budget for fiscal year 1993-94. Some costs may be recovered from various insurance policies, according to bridge officials. There is also a possibility of some costs being shared by the GGNRA and the U.S. Army.

Lead is especially hazardous to children ages 5 and under. A small amount of lead — the size of a few grains of sand — can irreparably damage developing nervous systems.

Although the state Environmental Protection Agency advised the bridge district that remedial action was required, the state agency left the development of the actual remedial plan up to the district.

"We're glad to see progress being

made and want to see the cleanup take place as soon as possible," said Allan Hirsch, spokesman for the California Department of Toxic Substances Control. "We'll be reviewing the plans and monitoring the work to make sure everything meets state standards."

Witt said the scope of the project will include determining the nature and extent of the contamination, evaluating various technologies that can be used for decontamination, prioritizing the costs and developing plans and specifications for the cleanup.

Twenty-three consulting firms made unsolicited requests to be included in the bidding process. The district sent out more than 30 requests for proposals.

Witt said more than 10 firms responded. A "short list" will be developed after reviewing the responses he said, and then those few firms will be asked to make full-blown proposals.

Abatement & regulation

Lead Law Proposed

By Susan Herbert

SAN FRANCISCO — San Francisco would be the first city in the country to have a comprehensive lead-poisoning prevention plan if legislation introduced at City Hall gets all the necessary approvals.

"It's very important that we get the ball rolling to reduce lead in our homes, schools, parks and water," said Board of Supervisors President Kevin Shelley, who introduced the landmark legislation at Monday's board meeting.

The groundbreaking plan would mandate:

- the establishment of an education and outreach program by city agencies to inform parents and children of the risk of lead poisoning, how to reduce the risk and where children can be tested;

- the creation of a citywide advisory committee to recommend a plan for lead hazard reduction;

- the notification of all tenants in a building in which a child is found to be suffering from lead poisoning;

- creation of an interagency task force to coordinate city efforts to reduce lead hazards; and

- educational training for owners and operators of child-care facilities that receive city revenues.

The legislation has been in the works for months as Shelley ironed out agreements with the public and private sectors. The problem in the city regarding lead-based paint is formidable. At least 75 percent of the city's 330,000

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dwelling units were built and painted before 1954, when lead was a prime ingredient in paints.

Other sources of lead poisoning are water, soil, ceramics and certain home remedies.

The legislation would create an advisory committee that would look at several unresolved issues and report back to the Board of Supervisors with recommendations in six months.

"We wanted to wait to introduce the plan until we were sure the funding was still available for three new positions created in the Public Health Department," Shelley said. "The money survived all the budget cutting."

The city has set aside \$300,000 to hire a public health nurse, an industrial hygienist and a health educator in the toxics department at the health department.

The Centers for Disease Control has identified lead poisoning as the number-one health hazard for children.

Even small amounts of lead can lead to irreparable neurological damage in young children. Intelligence,

speech and language proficiency, attention span and classroom performance may suffer because of it.

Shelley noted that the Public Health Department has determined that nearly 10 percent of the city's children, from newborn to 6 years old, show high levels of lead in their blood.

"We have 44,000 children in that age range in the city," Shelley said. "With about 10,000 children born each year here it is imperative we safeguard them."

Shelley said the city has applied for \$6 million in lead abatement funds from the federal Department of Housing and Urban Development.

"We are at risk of not getting the funding if we don't have a program in place," Shelley said.

The legislation has been sent to the board's City Services Committee for public hearing. If there are no hitches, the legislation will then go to the board's Finance Committee and then to the full board for approval. The final approval is expected Dec. 7.

"This legislation represents a serious and meaningful commitment to the health and welfare of every young child in the city," said Neil Gendel, project director for the Coalition to Prevent Lead Poisoning.

Lead Law Proposed

House bill 1000, introduced by Rep. [Name], aims to regulate lead levels in drinking water. The bill requires public water systems to test for lead and install filters if levels exceed the federal action level. It also mandates public notification of violations and provides for civil penalties for non-compliance.

The bill is part of a broader effort to address environmental health concerns. It builds on existing federal and state regulations by providing more stringent testing requirements and clearer notification procedures. The legislation is expected to pass the House in the near future, pending committee review.

Public health advocates support the bill, citing the potential for lead exposure to cause serious health problems, particularly in children. They argue that the proposed regulations are necessary to protect the public and ensure that drinking water is safe. The bill also includes provisions for technical assistance and funding to help smaller water systems comply with the new requirements.

Toxics Agency Frustrates G.G. Bridge Officials.

District may plan lead cleanup on own timetable

By John R. Moses

SAN FRANCISCO — Golden Gate Bridge directors on Friday heard a tale of frustration from staff members who have been dealing with state toxic substances regulators since May over the lead contamination of federal parkland beneath the span's anchorages.

State officials said Friday that they "haven't forgotten about the district and that they will soon contact its representatives. They also said the state will keep an eye on the district's independent moves to start the ball rolling on a toxic cleanup.

Bridge district staff issued its first-ever public chronology of events surrounding the discovery of lead-tainted soil at the base of the span's San Francisco and Marin anchorages.

The report includes details of intense scrutiny by California Occupational Safety and Health Agency inspectors and state air quality inspectors, who descended on the bridge district after the *San Francisco Independent* reported the results of lead tests it had performed on the sands beneath the span.

"We're literally leaving no

stone unturned to make sure we resolve (the contamination) to the satisfaction of the regulatory agencies," General Manager Garney Campion told the district's Building and Operating Committee Friday. The informational hearing was called by city Supervisor Jim Gonzalez, a San Francisco representative to the district.

Gonzalez praised the district staff for "moving ahead even without validation from Cal EPA (Environmental Protection Agency)" and treating the situation "not in a reactive fashion."

The lead-tainted areas are currently fenced off on the San Francisco and Marin sides of the span, and are marked with warning signs.

Cal OSHA gave the bridge district high marks for worker safety, after conducting an exhaustive search of district files, and after air quality regulators installed air monitors on the north end of the span, bridge directors heard.

Ready to go it alone

After months of delays within the state's toxics department, the Golden Gate Bridge Highway and Transportation District received on July 17 formal orders to fence off contaminated land and post warning signs on those sites.

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Now bridge officials say they are willing to move ahead of the state and start designing a cleanup plan. Since the state is late in delivering its paperwork to start that part of the process.

"We believe from reading the state regulations that that is the next appropriate step," District Safety and Environmental Coordinator Kary Witt told the nine-member Building and Operating Committee Friday.

The bridge district's top administrator praised Witt and Bridge Manager Robert Warren for their work on the project, including overseeing installation of 800 linear feet of chain-link fencing.

The Department of Toxic Substances Control — the agency directing the cleanup plans — has yet to even deliver to the district a bill for its staff time. According to the report submitted to a bridge board committee, the bill was promised in late August.

"We do know that they were sandblasting, and we told them they could resume sandblasting," said Allan Hirsch, spokesman for the Department of Toxic Substances Control in Sacramento.

The logic, he said, is that land below the work area is already contaminated and will be cleaned up later.

Hirsch, who recently began working as spokesman on the bridge con-

tamination issue, said he as yet has had no comment on the district's plans to start finding a consultant and planning a cleanup. "We are capable of asserting our authority to ensure that any cleanup work meets our standards," Hirsch said.

State toxics officials were late getting the "fence and post order" to the district and are behind in an expected delivery of orders for a "preliminary danger assessment," the next step in the process.

Hirsch said the agency is preparing that letter and hasn't yet sent a bill for its services to the agency. The billing is handled by the state Board of Equalization.

The state's chief toxic substances control agency has had several organizational shakeups this year, many coming at key times for the bridge cleanup timetable.

Complicating the situation have been several emergency cleanups, such as a Martinez chemical explosion and other releases within the Emeryville regional office's jurisdiction, which took up staff time.

As well, lawsuits compelled key members of the toxics bureaucracy to wait to testify in court, keeping them out of their offices for days and weeks at a time while work jurisdictions within the offices were shifting.

The job of compiling the complex fence and post document fell to state staff who had never written such an order, and that staff was confounded by the myriad of land rules, rights-of-way and jurisdictions.

The district plans to put out calls for a consultant to plan a cleanup of the tainted sand, despite having heard little from the state and only receiving one official document from the state since May 5, Safety and Environmental coordinator Witt said.

The bridge district sent the Department of Toxic Substances Control a letter to confirm that the state recommended sandblasting be resumed and that the state thinks the district has followed instructions in sealing off contaminated land.

Hirsch said the state hasn't seen the letter yet.

Fences on Lead-Tainted Parkland Get State OK

By John R. Moses
and Susan Herbert

SAN FRANCISCO — State officials say the Golden Gate National Recreation Area and Golden Gate Bridge District have moved quickly to satisfy state orders to fence off lead-contaminated land below the Golden Gate Bridge and post the area as hazardous to the public.

The state has now asked bridge and park officials to post signs warning that people who ignore the warning signs and barriers will be cited if caught, and to cite trespassers once those warnings are posted.

Lead, if ingested through breathing or by hand-to-mouth activity, poses a danger to children even in relatively small doses, and to adults and even pets in larger doses.

The bridge district will hold formal discussions on the contamination problem at the request of Supervisor Jim Gonzalez, bridge director representing San Francisco County. The discussions have been placed on the agenda of the district's Building and Operating Committee for its meeting on Sept. 4.

The fencing and warning signs, which are in several lan-

guages, are mostly up to state regulations and are kept in good repair, Annina Antonio of the Department of Toxic Substances Control said Monday. The state may ask that one temporary section of fencing in Marin be replaced with more permanent fencing.

The Golden Gate Bridge, Highway and Transportation District is willing to put up new fence if asked, Antonio said, noting there may have been a verbal misunderstanding among toxic-substances regulators and the district about that

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stretch of fence. The contamination came to light after the *San Francisco Independent* conducted tests of sand beneath the span in Marin and San Francisco and found moderate to very high levels of lead there. The bridge district and Golden Gate National Recreation Area each did tests and verified that the land was contaminated.

Antonio inspected the fencing last week to make sure the bridge district was in compliance with the state's "fence and post order," a document issued earlier this month to let the agencies in charge of the tainted land

know where fences and warning signs should be erected.

The bridge district moved quickly to order safety fencing and has put other important projects aside to deal with the contamination and to design a cleanup plan, said bridge district General Manager Carney Campion in a recent interview.

The district has also put up a sign opposite the closed-off area on a path underneath the San Francisco side of the span telling people not to enter the area.

Antonio said the bridge district voluntarily extended a stretch of fencing down the face of a cliff because someone was observed climbing around the fence over a steep hillside,

taking a chance of falling into a ravine.

Now, she said, "It would take a lot of guts for people to get to the other side via the cliffs."

But since some people take warning fences as a challenge, Antonio said "people who are caught walking or loitering in the (restricted) areas will be cited if caught."

They will not be cited until signs warning of that are posted, she said.

The district's next step is to design a Preliminary Danger Assessment Program. Antonio said a letter from the state is due out this week or next about cleanup options. She said the bridge district is studying its alternatives.

8/7/92

Feds: Lead Didn't Go Far from Bridge

By John R. Moses
and Susan Herbert

SAN FRANCISCO — A battery of tests conducted by federal park officials in mid-June but not released publicly until this week further defined the boundaries of lead contamination hot-spots in the areas surrounding the north and south approaches to the Golden Gate Bridge.

The report did not conclude that the lead in the Golden Gate National Recreation Area soils tested during the survey all necessarily came from bridge painting operations, noting that some past marine uses and the pres-

ence of cars may have added to some inland contamination there.

But the highest levels in all of the tests conducted for governmental agencies were found on areas immediately downwind of the span.

Soil tests on areas to the west of the bridge in Marin County revealed miniscule amounts of lead, as did tests on Crissy Field's beach in San Francisco, well to the east of the span, indicating that lead did not drift to remote areas downwind, said GGNRA safety

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Lead

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officer Lance Lewis.

The tests confirmed that the area above the Lighthouse Keepers Lawn in San Francisco's Fort Point was contaminated, and that a large tree on a brushy hillside above the lawn acted "as a canopy" to filter some of the lead dust and keep it from reaching some of the lawn area, Lewis said.

GGNRA officials ordered a small cleanup at the site and performed some follow-up testing on the lawn, including analysis of grass there for lead content in the plant tissue. Based on follow-up tests they declared to the state toxics regulators that the area's lead contamination was "abated."

But test samples of soil from the lawn picnic area analyzed for the *San Francisco Independent* last week indicate that the corners of the lawn are still contaminated with lead, as is a tour bus staging area next to Fort Point.

Lead levels decrease in the areas downwind from the span to the east, dropping to almost zero by Crissy Field in San Francisco, and by Horseshoe Bay and Kelley Cove in Marin County.

One exception to that was an area of Horseshoe Bay that tested 1,300 parts-per-million (ppm) lead, well over the 1,000 ppm standard that classifies soil or sand as a hazardous waste if removed from its resting place.

The tests, paid for by the U.S.

Department of the Interior's Golden Gate National Recreation Area, were released by the state's Golden Gate Bridge, Highway and Transportation District managers following a request under the state open-records act for access to all files related to the lead abatement project.

Federal park officials had been quiet about their lead abatement plans, which included soil removal around a small rock marker on Lighthouse Keepers Lawn in San Francisco's Fort Point.

Lewis said the rock was chosen because, like the cypress tree that filtered the lead drift, the rock may have provided a collection point for lead.

Editorial

8/San Francisco Independent/August 4, 1992

The Official Response

Just as *Independent* staffers were tabulating their latest test results on lead and zinc levels on parkland beneath the Golden Gate Bridge, news began rolling in of public officials who planned to take action on the lead pollution beneath the landmark span.

State Sen. Quentin Kopp said Monday that a Senate committee on toxics will hold hearings on the matter this fall to see if legislation is needed to make sure this kind of contamination does not happen again.

On Friday, Supervisor Jim Gonzalez said he plans Aug. 14 to ask officials with whom he serves on the Golden Gate Bridge, Highway and Transportation District to hold a public hearing on how the land became contaminated and what the district plans to do about it.

Supervisors Willie Kennedy and Tom Hsieh took action Friday with a resolution calling for the bridge district to make a long-term plan to clean up the waste. It was passed under immediate adoption Monday afternoon.

The board didn't want public hearings, said Hsieh, it wants "results."

We hope that the attention focused on the district by other public agencies and state toxics officials will get some desired results.

Bridge officials must explain, for instance, why they recently sandblasted on the San Francisco side without testing what they were blasting, and after they said publicly there would be no more sandblasting on the structure until toxic dangers were cleared up.

They must also explain why a bike trail

under the San Francisco end of the bridge with lead and zinc levels our tests show to be in excess of recommended state total concentration levels is still open to the public.

It is also mandatory that answers be provided as to why there is still 800 parts-per-million lead in the paint sludge behind the bridge district's paint shop, despite repeated claims that there is "no lead paint on the bridge" anymore.

Some of the reddish sludge, highly reactive to acids, according to surprised lab technicians, was still wet.

Specifically, the bridge district must begin testing for zinc and a full spectrum of other heavy metals, such as cadmium and magnesium, all along the bridge easement corridor to determine the true extent of contamination in Marin and San Francisco.

Most importantly, the district's management must come to grips with the fact that the lead paint it used before 1960 is a public health hazard today.

The bridge district started sandblasting to remove that lead paint in the 1960s and continued until recently. That served to scatter toxic lead over the Marin anchorage, San Francisco's Fort Point, and into the Bay.

The bridge district now must use caution, study and planning before it does any more damage to the environment.

For those whose job it is to monitor the bridge district and the cleanup, the same job description must also apply.



DEXTER DONG

Golden Gate Bridge, Highway and Transportation District ironworker Ken Hopper works on a gate erected to keep people out of a lead-contaminated area at Fort Point.

Officials Seek Lead Hearings

Lead & zinc levels high on area left open to public; 'cleaned-up' lawn still tests high for lead

By John Moses and Susan Herbert

SAN FRANCISCO — While public access has been cut off to areas beneath the Golden Gate Bridge that proved tainted with lead in bridge district tests, samples of sand and soil from a pathway and a picnic area left open by officials show higher than allowable levels of lead and zinc contamination.

New tests conducted by the *San Francisco Independent* last week revealed hazardous lead levels in areas that remain open and frequented by tourists and picnickers, including one area the federal government told the state it had cleaned up.

The government considers exposure to soil containing 5,000 parts-per-million or more of zinc as hazardous, while lead contamination becomes hazardous at 1,000 ppm.

Board of Supes calls for cleanup plan; state Senate & bridge board to hold hearings

By Susan Herbert and John R. Moses

SAN FRANCISCO — A state and a local official each called for public inquiry this week into paint-sanding operations that caused heavy lead contamination on federal parkland beneath the San Francisco and Marin anchor-

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ages of the Golden Gate Bridge.

The San Francisco Board of Supervisors, meanwhile, notified Golden Gate Bridge management that it expects to see a long-range cleanup plan for the area, and commended the bridge district for fencing off hazardous land beneath the bridge.

State Sen. Quentin Kopp Monday announced plans for state-level hearings this fall on the lead contamination that caused Golden Gate National Recreation Area land in Marin and San Francisco to be closed for the first time ever due to toxic contamination.

Kopp, who serves on the Senate Committee on Toxics and Public Safety Management, said the committee chair, Charles Calderon (D-El Monte), has agreed to hold an interim hearing to determine whether legislation is needed to prevent a repeat of the parkland's contamination.

"I intend to examine, in this session's limited remaining time, any germane measures to see if any amendment would be desirable dealing with this issue," Kopp said.

Kopp was a bridge district director from 1977 to 1988, and vice president of that board from 1984 to 1986.

Lead and zinc are present in the surface soils below the span, both in areas closed to the public and in areas still open. Lead can cause developmental disabilities in children. The human body has no use for lead, but often mistakes the poisonous metal for calcium. Children's bodies tend to integrate the metal into their systems.

Zinc is a metal that is used by the human body and thus is less harmful in small amounts, health experts say. Nevertheless, it can cause the human body's chemicals to become imbalanced at high levels of exposure.

County Supervisors Willie Kennedy and Tom Hsieh, with Board President Kevin Shelley joining as co-sponsor, sent the San Francisco resolution past the full board.

Kennedy and Hsieh are also representatives of the city sitting on the board of directors of the Golden Gate Bridge, Highway and Transportation District.

"I want to make sure these agencies prepare a long-range plan to eliminate (the contamination) in a safe manner," said Hsieh of his involvement in the resolution. Hsieh's office called the bridge district's general manager, Carney Campion, to tell him of the resolution's impending passage, and Hsieh said the district assured his office it would cooperate fully.

The resolution does not call for public hearings at the Board of Supervisors.

"It doesn't require public hearings because we want action," said Hsieh, who said he will follow the district's progress as a member of the district's finance and building and maintenance subcommittees.

A fourth county supervisor, Jim Gonzalez, who was recently appointed a bridge director as well, said Friday

that he will be seeking public bridge district hearings when the district's board of directors meets again this week.

The hearings will focus on how the lead contamination occurred, and what steps the district will take in dealing with the problem.

The bridge board has not considered the matter in public session, although one bridge director who is not a county supervisor said privately that the matter was taken up in executive session, behind closed doors.

Such closed-door discussion could violate the Brown Act, a state open-meeting law that allows only personnel matters, pending litigation and property transfers to be discussed in private.

Gonzalez said he will ask for a public hearing at the bridge district board about how the land became poisoned and who is responsible for the contamination.

Among the avenues of inquiry Gonzalez said he plans to explore is the district's adherence to and knowledge of environmental laws regarding open sandblasting of lead paint.

Bridge district staff has kept the directors updated through memos and copies of state reports and news clippings.

Lead

from page 1

The *Independent's* tests of one stretch of open bicycle and hiking path found a level of zinc as high as twice the recommended state and federal safety limit for exposure to the metal dust.

On the same trail the *Independent's* most recent lead tests of what appears to be newly deposited sanding grit show a drop in the level of surface lead contamination found by the bridge district two months ago.

The lead levels, as well as zinc levels, were still high enough along a long stretch of that one paved path to mandate the attention of state toxics officials.

A lawn whose lead content Golden Gate National Recreation Area officials have proclaimed to the state as "abated" to a level below 300 parts-per-million tested well above that in two of three samples.

The GGNRA's "abatement" of the area was the removal of soil and sand around a rock historical marker.

The exposed soil at the south west corner of the lawn tested at 864 ppm, while the northeast corner, a packed dirt trail at the northeast corner of the lawn, tested contaminated at 1,692 ppm.

A few yards away, a sandy tour bus loading zone tested at 3,776 ppm, more than three-and-a-half times the federal level for what constitutes hazardous waste.

How bad is zinc?

Zinc is the metal used in the span's gray primer coat. The red finishing coat is now a modified acrylic. All lead-based paints used by the bridge district were replaced in the late 1960s with non-toxic formulas, according to bridge officials.

The human body uses zinc, but too much zinc will upset the body's system, health officials say. The human body has no use for lead.

The surface paint used to replace lead paint in the 1960s and 1970s, however, was made of zinc, accord-

ing a contractor who worked on the bridge during that time.

Land below the bridge, however, has never been tested for zinc contamination by the district.

The *Independent's* tests show that along the paved trail beneath the south end of the span, zinc reaches a high concentration of 9,585 ppm on the west side, 6,434 ppm right under the span, 6,067 ppm on the east side of the trail and 6,009 ppm where the trail intersects with the path to the parking lot, by a "Caution Bicyclists" sign.

Picnic area still tainted

The recent tests commissioned by the *Independent* show 3,776 parts per million lead — more than three times the level the state requires for abatement — at the Fort Point tour bus staging area.

The area, where children on field trips and youths and adults on tour buses board the coaches, was never before tested for contamination.

Along the lawn trail to and from the same tour bus stop, the lead measured 1,692 parts per million, but zinc levels were very low on all parts of the lawn tested.

The California Environmental Protection Agency requires cleanup of land with lead levels above 1,000 parts per million (ppm), and of zinc at 5,000 ppm.

Lead still in the paint?

Sludge from behind the painting shop in the bridge district's maintenance yard indicates that whatever is going on the bridge, it contains more than 800 ppm lead along with between 27 percent to more than 90

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percent zinc or zinc oxide.

Dan Coltrin of Forensic Analytical Laboratory of Hayward, the lab that analyzed the samples submitted by the *Independent* last week, wrote in a report Friday that the high (90 percent) zinc concentration in the painting sludge "baffled" the machinery.

Coltrin surmised the dry sludge sample "might well be industrial grade

zinc oxide, which contains lead as a contaminant."

Neither Golden Gate Bridge Manager Bob Warren nor other district employees could be reached for comment Monday.

In May, bridge manager Bob Warren stated that the old leaded paint had been completely removed from the San Francisco side of the bridge during the sandblasting project that began in 1970.

Unresolved, then, is whether the bridge district is continuing to contaminate the land by further sandblasting the paint from the world-famous span at points where lead-containing paint or primer was used.

Limited sandblasting continued as recently as a month ago on the south side of the span, and tounstas as well as contractors with metal detectors studying and marking the routes of underground pipe were exposed to the stream of the blast grit from the sanding.

The sanding was witnessed by an *Independent* staffer.

Light, fine mounds of sand that appear to be recently deposited grit were collected from the bike trail next to the work area and tested at an average of 1,056 ppm lead.

Bridge district officials could not say Monday if the lead on the ground, and in the paint residue behind the maintenance building, is coming from the new paint formulas.

The hazards of removing leaded paint have been formally recognized in the bridge, painting and corrosion control industries since at least 1987, with conferences, papers and lectures on the subject being distributed to members of these professional organizations.

At least one bridge employee has attended the conferences since 1990.

As early as 1990, Golden Gate Bridge staff, returning from a conference on environmental safety, confirm that they advised bridge management of the environmental hazards of removing lead paint.

Compounding the problem is the revelation that areas under the bridge are also contaminated with zinc.

Last week fences were erected and signs were posted warning the public of the lead hazards.

Lead, even in small amounts, if ingested or inhaled by young children can irreparably harm developing neurological systems, causing lower I.Q. and impairing the ability to concentrate.

Needed: Leaders Against Lead

Three months after the discovery that sanding of the Golden Gate Bridge has caused contamination of parkland beneath both sides of the span there has been little progress toward addressing the problem.

In fact, it has taken all of that time just to get fences placed around some of the most dangerous sites. And the way the fences are designed has just made the area more dangerous because people are taking chances to get around them.

We did see a good start toward addressing the problem on Monday, with the installation of some strong fencing. But what is really needed is a plan to either get rid of the leaded soil altogether or completely seal off contaminated areas.

Bridge district directors have yet to discuss the problem, however, and none of San Francisco's directors has taken the district to task for the situation.

The Golden Gate Bridge, Highway and Transportation District and the Golden Gate National Recreation Area seem unwilling still to admit that the land is poisoned, and are only unwillingly sharing what they are planning for the site.

A major cleanup would cost millions of dollars.

No public official has called for public hearings on the situation. No San Francisco bridge director has taken the leadership role on this matter, either.

The state does not seem interested in civil or criminal prosecutions under state environmental laws, despite clear evidence of wrongdoing.

The clearest evidence of the responsible

governmental agencies' combined handling of the situation was played out this weekend at the scene of the crime.

Bikers, hikers and tourists using the poisoned parkland next to the Golden Gate Bridge Saturday and Sunday got a little extra exercise hoisting themselves and their bikes, packs or walking partners over and around the new barriers put up to protect them from lead-tainted soil.

The fences — chain link strung through thin steel rebar — were erected Friday and vandalized by Saturday morning, but no one thought to check them.

Parents helped their children climb over jagged, vandalized fencing to get a better look at the bridge by walking on hazardous soils. And many of the kids who went on the land were picking up things in the contaminated sand.

Nowhere were there any signs saying why the land was closed, nor were personnel from any of the responsible agencies stopping people who didn't know there was a problem with the land from needlessly exposing themselves to health hazards.

The response from the state has been slow and there has been little oversight of actual compliance by the bridge district and GGNRA, two agencies that seem to simply hope everyone will forget there is a major lead hazard next to the bridge.

Local leadership is needed to protect the people who go to the parkland from the toxins.

The question is: Who will provide this leadership?

Painters Discover Sanding Dangers

By Susan Herbert
and John R. Moses

SAN FRANCISCO — Sandblasters and painting contractors may be unknowingly contaminating San Francisco neighborhoods — rich and poor alike — with lead, asbestos and other toxic materials while performing routine work on homes and businesses.

City Health officials cite as evidence a recent problem on Russian Hill, where high pressure water-blasting of the exterior paint at a Green Street apartment building may have resulted in asbestos contamination of an entire neighborhood.

A recent sandblasting job in the Marina District compelled a worried neighbor to sample sand grit from the sidewalk in front of his building. A lab found that the grit contained 44 times the lead level to qualify the grit as hazardous waste by state and federal standards.

Health and painters union officials say the problem of accidental sandblasting contamination is widespread, and that many contractors don't know the state's rules about testing surfaces before blasting them and spreading their coating all over the area.

"We are in the midst of the Green Street investigation

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Lew said that asbestos is still used in some paints and stucco. When stucco is blasted, any asbestos fibers present are released into the air.

Health officials say contractors are required by law to conduct a thorough survey and test paints and materials that are to be sandblasted before proceeding with any renovation.

Title 22 of the state's Health and Safety Code mandates that contractors determine what substance they are about to blast off a structure. If the substance is hazardous, they must contain it. If they remove large quantities of the substance, they must register with the state as a generator of hazardous waste.

Decades of paint blasting has forced the closure of hiking areas due to lead contamination below the Golden Gate Bridge, and of lead-contaminated sheds below the Bay Bridge that are owned by the Port of San Francisco.

The high-profile problems of toxic contamination created by the two bridges are mirrored at a much smaller level around many old homes when contractors use old methods to remove paint or stucco.

The same laws that now govern large toxins generators, such as bridges, also govern small contractors and even private homeowners if they're undertaking a large enough job involving the stripping of hazardous materials.

Mike Fess, financial secretary of Painters Union, Local 4, said many contractors are not aware of the safety regulations.

"You could bet that any building you find being sandblasted in the city will have asbestos or lead problems," Fess said.

Local union members are now taking classes and becoming certified as lead abatement technicians, Fess said.

Sandblasting is usually contracted out to companies specializing in paint removal, Fess said. The painters and sandblasters are protected because they wear standard safety gear, but neighborhood residents may be at risk from the gritty debris, he said.

If asbestos is present, contractors must notify the Air Quality Control Board 10 days in advance of any work.

The area of asbestos removal must be completely contained and strict guidelines regarding air supply and worker health safety must be observed.

"We have a 30-minute response time," said Lew. "If we are called to investigate nuisance problems on a sandblasting, we'll be there right away."

Lew said his department received one call about 999 Green St.

"The contractor obviously did not comply with the regulations," he said. "Hydroblasting is not a proper method to remove paint or stucco containing asbestos."

Asbestos fibers, if inhaled, can cause asbestosis, a chronic lung disease. People with asbestosis are also at risk of developing lung cancer.

But asbestos isn't the only substance that can be spread around during renovation work.

One Marina resident, concerned that a sandblasting job was dusting the neighborhood with lead paint, took some sandy debris to a private lab and said the tests revealed a lead content of 44,000 parts per million.

Paint clouds in the Marina

Marina residents had a different complaint last month as they observed paint particles blowing in clouds of dust from sandblasting on a Filbert Street apartment building near the Presidio.

Tests commissioned by one of the neighbors, who asked that his name not be used, revealed the dangerously high level of lead — 44 times the federal government's hazard level for contaminated soil or grit.

City health officials say that there are appropriate agencies that can respond to concerns about any remodeling that requires sandblasting or hydroblasting.

"You can call the Bay Area Air Quality Management District, but the sandblasting has to be happening before they can take action," said Sue Cone, industrial hygienist for the city's Public Health Department.

Cone said the level of lead revealed by a test on the drifting debris was significant.

The California Department of Health Services lists the danger level of lead contamination at 2,000 parts per million for adults and 500 ppm for children.

Lead that is ingested or inhaled is especially hazardous to young children under the age of 5. A small amount, equivalent to a few grains of sand, can irreparably damage developing nervous systems.

Debris of sand and paint chips littered the street around the corner building at 2800 Filbert St. for days.

The old paint on the building was sandblasted the week of May 18 in preparation for painting. According to one nearby resident, the painters wore no protective gear such as respirators or coveralls.

(cont'd
from
Painters)

from the city's Public Health Department, said there is a need for a new city ordinance that would deal with contamination caused by renovation work.

"There is a law now, but it is not strongly enforced," Rizzolo said. "We are working on an ordinance that would require any contractor doing renovations to state whether there is lead or asbestos involved in the work and, if so, to agree to do the work according to health and safety regulations."

The contractor would have to file this information before acquiring a permit to begin the renovations.

Rizzolo continued, "When the work is finished the contractor would return with a certificate certifying that the area was determined by a qualified health worker to be safe for occupancy."

Rizzolo said the city's permit process was the most viable way to catch contractors before their work began, to make sure they were aware of the regulations regarding lead and asbestos, and then get assurance that the job site was left uncontaminated.

"An ordinance asking for this process is under discussion now," Rizzolo said. "But it might not happen for a while."

Health officials say inhalation of lead dust can bring on flu-like symptoms, a possible indication of lead poisoning. Studies also show that lead-contaminated dust carried home on the clothes and shoes of workers is enough to cause lead-poisoning in their children.

Lead, once absorbed into the body, is treated like calcium and stored in the bones or the brain. But unlike calcium, it cannot be used and thus causes deleterious health effects.

The amount of lead in paint has been reduced over the past 40 years. At one time, industrial paints could contain more than 500,000 ppm lead. In 1950 and then again in 1978 lead levels were scaled down. Now the federal government allows only 600 ppm of lead in paint.

Need for a new law

David Rizzolo, asbestos expert

Lead-Tainted Ft. Point Bluff Closed

By John Moses
and Susan Herbert

A sandy bluff in San Francisco just below the Golden Gate Bridge was fenced off last week due to high levels of lead contamination from the span, a Golden Gate National Recreation Area (GGNRA) official said Monday.

The Fort Point site joins the Lime Point Trail in Marin

as areas closed to the public due to toxic soil while state officials evaluate the depth of the contamination, which was likely caused by continuous sanding and sandblasting of high-lead paint on the bridge over the past three decades.

Tests taken by the *San Francisco Independent*, and confirmed by tests paid for by the Golden Gate Bridge, Highway and Transit District last

month, show moderate to very high levels of lead in soil near and directly below the span.

Lead is harmful to children if ingested even in small amounts, and can be harmful to adults at larger amounts.

"The fence was installed June 8 in response to the test samplings that showed the area highly contaminated," said Howard Levitt, GGNRA spokesman.

Levitt said the Lime Point trail on the Marin side was closed off with snow fencing but that the agency decided to use a more attractive fence on the San Francisco side, which is more popular with hikers and tourists.

Congresswoman Barbara Boxer's aide, Sam

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Lead

from page 1
Chapman, said Boxer has been aware of the discussions about the lead issue but has not become involved in the controversy.

"None of the agencies, the bridge district, EPA or GGNRA, have contacted us," Chapman said. "If there needs to be federal funding or oversight she might get involved."

Michael Yaki of Congresswoman Nancy Pelosi's office said Pelosi is planning to hear the recommendations from EPA.

"We want to make sure the district is exercising prudence in regard to public access and public safety," Yaki said. "But the larger issue is how are we going to clean it up and who is responsible for abatement? That will have to be worked out between the GGNRA and the bridge district."

Yaki said he assumes that a cleanup will have to take place so that the public can use the parklands again.

State toxics officials have yet to give federal and state officials any formal guidance about which areas they should seal off or treat for lead abatement in response to lead levels

that, according to bridge district soil tests, are as high as 61 times the federal government's danger level of 1,000 parts-per-million.

The *Independent's* tests showed a high of 510,000 parts-per-million below a recently sanded North Viaduct support tower on the Marin side of the bridge. The sand in that spot was heavy with tiny red paint chips.

The bridge originally used paint consisting of 25 pounds of red lead added to every one gallon of linseed oil, according to a 1938 book published by the bridge district.

The district later switched to paint

that was 68 percent red lead, or 680,000 parts-per-million. In some areas the bridge was painted with three coats of the high-lead-level paint before it opened for use.

Follow-up tests below the same towers did not duplicate the 510,000 parts-per-million reading. Paint chips peeling from an outer paint layer on the unsanded base of a Marin approach support tower registered more than 39,000 parts-per-million, or 3.97 percent lead.

The bridge district did not test that area of the ground under the span

BRIEFLY

More bridge alerts to go up

State environmental officials have ordered Golden Gate Bridge and state park authorities to build more fences and signs in areas contaminated by lead-based paint.

In May, park land on both sides of the bridge was found to contain dangerously high levels of lead, and some areas were fenced off.

Marin's Lime Point trail will remain fenced off and closed. High terrain above the trail will be posted with caution signs as well.

There are no plans at this point to clean up the contaminated soil.

Marin IJ
July 29, 1992

Keep Off the Lawn

As summer's cool fog occasionally eases way to pleasant, warm days and the wind wanders to plans for summer excursions outdoors, pollution and toxins among the last things likely to pop into one's mind.

But many people aren't getting the message about one spot in San Francisco: it is an attractive area, but is also poisoned with lead and is thus an overall bad place to take an outing.

Due to the baby-elephantine bureaucracy of the state's Environmental Protection Agency, no orders have gone out to the feds asking them to post a "no picnicking" sign at Fort Point Lighthousekeeper's Lawn — weeks after tests showed the area to be contaminated.

And the feds themselves don't want to make the area as off-limits to picnickers.

It is unwise of the Golden Gate National Recreation Area to allow eating in this heavily used area, especially when the EPA acted so quickly to close off a contaminated trail in Marin and recently recently also closed the bluff above Fort

Point. It was especially annoying, however, to see the *San Francisco Chronicle's* "Summer by the Bay" section of May 19 feature a pretty color picture of the Golden Gate Bridge and Fort Winfield Scott, in the process of urging people to go and expose their families and friends to the high lead levels. This area should have been posted off-limits long ago.

It was May 5 when the *Independent* first published its findings of high lead levels at

Fort Point in San Francisco and at Lime Point in Marin County.

About two weeks later, the Golden Gate Bridge, Highway and Transportation District's own contractors reported tests showing the land around the span was, indeed, contaminated, including the lawn area.

To put the Lighthousekeeper's Lawn contamination levels into perspective, it tested at 3,700 parts-per-million (ppm) — more than seven times the 500 ppm level at which the state says children should not come into contact with tainted soil.

At 1,000 ppm, soil removed from the lawn's perimeter would have to go to a special toxic waste dump.

Much of this picnic area is covered with grass, which would form a protective barrier against lead paint chips or dust in the soil beneath, as long as the dust isn't blowing down from the highly contaminated bluff above the lawn. Some of the lawn area is bare or dry. Some of it is dirt.

Last Monday this area was being used by tourists and tired joggers and bicyclists stretching out for a rest.

Anyone who has picnicked with kids knows that if they can walk or crawl, they will also probably play in any loose soil they can find and put their fingers in their mouths.

To put it bluntly, the GGNRA should not let anyone picnic on that lawn, or anywhere else at Fort Point, until contaminated soils are removed or covered over and the area is certified as safe.

Bridge Officials Ignored Early Lead Warnings



For years bridge workers sandblasted lead paint off of Golden Gate Bridge, despite warnings that residue can cause health hazards. A sign (inset) warns passers-by under the bridge of work above.

Susan Herbert and John Moses

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As early as 1990, Golden Gate bridge staff advised bridge management of the environmental hazards of removing lead paint from the span.

Manager Bob Warren, however, said he does not recall any such advice and continues to insist that the bridge's sandblasting is in full compliance with rules from all regulatory agencies despite high levels of toxic lead contamination in parkland beneath the span.

"No regulatory agency ever questioned our sandblasting technique," Warren said.

Fallout from the bridge, which has been undergoing a complete removal of lead-based paint for 20 years, is suspected of contaminating the parkland to lead levels many times the 1,500 parts-per-million limit set by the state's Environmental Protection Agency.

State EPA regulations dealing with hazardous waste require soil testing, containment of the waste and proper disposal. Soil tests have been conducted, and Warren said he is now waiting to hear what the EPA requires for abatement, "if there is hazardous waste."

According to the Golden Gate Bridge, Highway and Transportation District's board of directors, no alarm bells have been sounded by Golden Gate Bridge staff about possible lead dangers from sandblasting fallout. Nor have there been many complaints about bridge sanding operations, the 19-member boards says.

But district records — and materials from a structural steel trade organization — indicate that the bridge district sent at least one representative to a 1990 conference at which the dangers of sandblast ground contamination

Bridge

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and the specifics of California law requiring testing of potentially hazardous sandblast waste were discussed in detail.

In 1990 Michael Lindsay, the bridge's paint superintendent, attended a conference of the Steel Structures Painting Council in Pittsburgh, Penn., and made an oral report to Warren about the hazards to health and the environment of leaded paint removal.

Warren said he that although he remembered the conversation he could not recall any mention of environmental hazards. No tests were made of the sandblast waste at that time.

Industry experts, however, say it is unlikely that the bridge district did not know about its obligation to test, as required by an EPA law that went into effect in the early 1980s.

"Years ago contractors just stuck someone out there and sandblasted, but now the demands are strict and the contractors must be knowledgeable of all the local regulations," said John Lunardini, an East Coast consultant on lead paint removal.

One bridge official said that although the district has been keenly aware of the bridge workers' health regarding the occupational hazards of lead, the concern about ground contamination was not addressed.

The Lime Point Trail in Marin County was closed to the public last month by federal park officials after tests conducted by the *San Francisco Independent* and tests conducted and paid for by the bridge district found high levels of lead under the span.

The bridge district's board is expected to discuss the lead contamination issue at its meeting Friday, June 12.

The bridge district ordered a complete paint removal of the world-famous span in the early 1960s. Although lead-based paints have not been used since then, according to the district, the sandblasting has stripped the structure down to the metal, blasting away numerous coats of old lead-based paint.

With paint chips clearly visible in the soil under the bridge on both the Marin and San Francisco sides, the evidence points to the district's paint removal method as the cause of the

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San Francisco Independent 6/9/92 (cut'd from Bridge)

contamination

About 95 percent of the bridge has been sanded and repainted, with only a portion over the Marin-side parklands remaining to be done.

Bay directors, lots of paper

Most of the bridge district directors serve in local governments in Bay Area counties and have jobs in the private sector, and many surveyed say they rely heavily on district staff to provide them with needed information about complex issues regarding the bridge.

All said potential dangers to parkland were never considered, although the board was apprised of reports on worker safety, which included careful monitoring of bridge painters' blood for lead. "I guess no one thought of it," said San Francisco representative John Moylan, an appointee of Mayor Frank Jordan from the labor field who also sat on the board from 1986 to early 1987.

Moylan said worker safety was always a big concern of his, given his building trades background. "There were no complaints from the workers

that I know of."

Another director recalled one complaint from a bridge neighbor about grime from the sanding.

The only related complaint we ever got was from people in the marinas on the north end," said the board's second vice president, Robert McDonnell, a San Francisco appointee who works for the Laborers International Union AFL-CIO.

Grill from sandblasting was settling on boats in a private marina area there, but measures were taken to cut the drift and no one raised safety concerns.

McDonnell said no issues about the potential hazards of lead or zinc paint sanding ever came to the directors, to his knowledge, during the past decade he has been a director.

As well, he said he recalls no requests for the purchase of vacuum-equipped sanding machines, which would stop most of the sanding grain on the board from 1986 to early 1987. "I guess could go to a subcommittee, he said.

The bridge district's structure breaks up duties between subcomm-

are passed as a single item—a consent decree — by the board if a committee interchange of the item passed a recommendation without dissent.

"We don't micro-manage," he said.

From paint or fumes

McDonnell said the district is interested in finding out if paint or car fumes caused the contamination, and said the district's laboratory was asked to try separating the paint from the sand to see if lead particles from cars caused much of the pollution.

He cited elevated lead levels found in an *Independent* investigation of Larsen Park along 19th Avenue in San Francisco, and said, "We think the bridge traffic is just as heavy as along 19th Avenue."

Sonoma County representative James Harberson, a county supervisor there who has an engineering and teaching background, said he is aware that the bridge staff has been "working with this thing with quite a bit of vigor" and said he expects the board will be notified that all sandblasting has been stopped.

Harberson said the board has been told of the continued sandblasting, and he defended the need to blast the bridge to protect it from the elements. "You've got to get rid of the rust. It's the structural integrity of the bridge you have to worry about," Harberson said.

Bridge officials say the bridge painters have been protected against the occupational hazards of working with lead contamination.

Kary Witt, occupational safety officer for the district for the past two years, said since 1982 the monitoring of workers' blood has revealed no one with a blood level above 40 micrograms per deciliter, the safety threshold determined by Cal/OSHA.

"There has been no one even near 40," Witt said. "In recent years the workers' blood levels range around 10 or so." Witt, who said the district has been diligent about workers' safety, never said to comment when asked if the ever asked the district to investigate the possibility that sandblasted lead paint might be contaminating the grounds below the bridge.

Bridge Ceases Paint Removal

By John R. Moses

The state agency investigating lead contamination on parkland below the Golden Gate Bridge sent three toxins experts Wednesday to visually examine test sites that showed lead contamination, but the agency's initial recommendations to local officials have not been released.

The California Department of Toxic Substances Control said last week that it would advise local and federal officials with jurisdiction over land beneath the bridge to close off the area at San Francisco's Fort Point and post another Fort Point area as off-limits for picnics.

"These things generally don't occur overnight," said Jill Singleton, public information officer for the California Toxic Substances Control Agency. The agency is drafting orders regarding fencing and posting of certain areas, something Singleton said is standard procedure.

By Thursday, no formal letter of advice had reached officials with the Golden Gate Bridge, Highway and Transportation District or the Golden

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Gate National Recreation Area (GGNRA), although individual state health department and toxin control officials say they have spoken with safety officers from those agencies over the past three weeks.

Bridge district officials said Thursday they have halted all bridge sandblasting operations and are awaiting an advisory report on abatement from state toxins officials.

"We thought we would hear by now but so far we've heard nothing,"

said Bob Warren, general manager of Golden Gate Bridge.

Singleton said three toxins experts — a toxicologist from her agency, one from the state's lead program and one from the California EPA headquarters — went to the test sites to review the places where a bridge district contractor sampled soil.

Singleton did not know whether the toxicologists would recommend further testing based on their visual survey, which was designed to determine, in part, whether the places sampled were areas where the public would be likely to go and contact the

soil.

The state's policy is to act only on areas where contamination exceeds 10,000 parts-per-million (ppm) of lead unless the area is a heavy public use area, such as the Fort Point picnic lawn in San Francisco.

GGNRA officials decided on their own last week to fence off the Lime Point Trail on the Marin side of the span as well as an area at the end of the closed trail, at the base of the North Tower.

The sand beneath the tower registered 61 times more lead contamination than what health officials consider a public hazard.

The closed trail is contaminated at an average of more than 2,000 parts-per-million — four times the state's maximum exposure level of 500 ppm for children and double the federal standard for soil that constitutes hazardous waste, 1,000 parts-per-million lead.

Land beneath the bridge's North Viaduct support towers is contaminated at 10 times the federal waste level, according to samples tested for the *San Francisco Independent* last week, but remains open to the public.

The *Independent's* sample of soil beneath a tower on the north side of

the road showed similar levels to that of the bridge district's test, which was conducted below a tower on the south side of the paved road below the span.

The *Independent's* follow-up test did not duplicate the 510,000 parts-per-million lead contamination level found in its April 15 soil survey.

The *Independent's* tests did find soil tainted with lead at levels between 8,000 and 10,000 parts-per-million on the Marin roadside, with paint chips containing 32,000 parts-per-million of lead peeling off the tower base.

Lead that is ingested or inhaled, even in minute amounts, can cause serious health problems to adults and children. In adults, low blood levels of lead (25 to 40 micrograms lead per liter) can cause symptoms often mistaken for the flu or bacterial infections, such as nausea, headaches, muscle and joint pains, loss of appetite and irritability.

In children, the health dangers are more severe and an amount of lead equivalent to a few grains of sand can cause irreparable damage to developing nervous systems. Any lead exceeding 9 micrograms per liter in young children calls for medical attention.

Who Poisoned the Parkland?

If the average citizen were to dump lead-based paint chips and lead dust onto national parkland he or she would probably be arrested if caught and face civil fines to pay for a toxic cleanup.

When an influential government agency does it, and much of the region's local body politic has sat on its board of directors over the past two decades, who is willing to go after the polluter?

No one so far has moved against the people who run the Golden Gate Bridge. People who approved the massive contamination of scenic parkland and allowed millions of people to walk around and picnic on lead-tainted soil.

As recently as last week, the bridge's manager of 21 years, Bob Warren, was telling news crews and print reporters that there is no verifiable danger from the lead contamination and no lead problem now because of the bridge.

This is not true. Medical experts and the state have been saying for years that lead is dangerous to children. And the bridge still contains lead-based paint that will have to be removed somehow.

People who have no regard for public safety have no business in official offices, and must either be educated about lead dangers or find a new job where they are not responsible for the safety of millions of people.

We wonder exactly what bridge administrators and directors were thinking when they decided that pulverizing lead paint and blasting off lead paint chips would

not cause the ground below to become a hazardous waste area.

Did they think that the lead would simply go away?

Or did they think no one would notice?

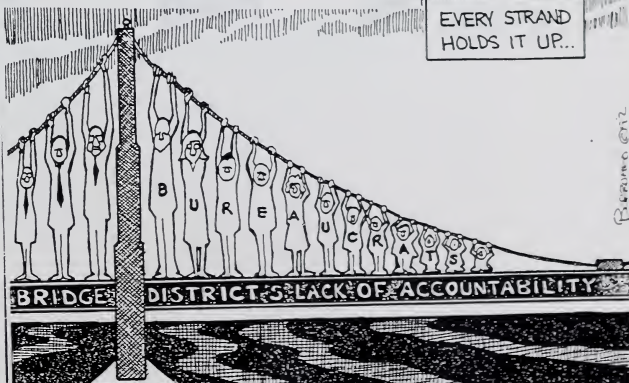
Primary among our principles of American justice is the notion that all people — as well as governmental agencies — must be held to the letter of the law.

Secondarily, the axiom that ignorance of the law is no excuse for a violation of the law also applies to public agencies as well as private citizens.

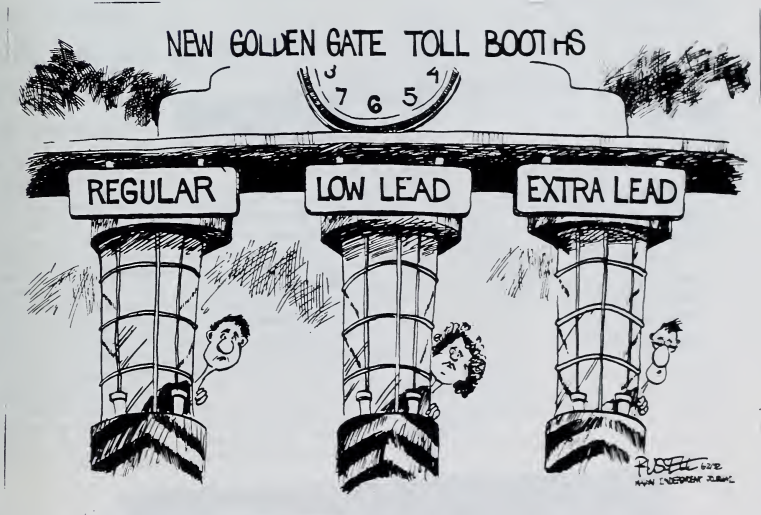
Those who made the decision to blast lead paint onto the ground, and advised the bridge district's directors that this was a good idea, should lose their jobs as soon as possible if they are still employed with the district.

Our city's representatives on the district's Board of Directors, including Supervisors Terence Hallinan, Bill Maher, Willie Kennedy and Tom Hsieh, have been so far strangely silent about the lead pollution at the bridge. They must all start paying attention to this issue, and hold open hearings to determine why the contamination happened, who was responsible and what will be done about it.

The lead-based paint on the Golden Gate Bridge has been sandblasted onto the ground and into San Francisco Bay for more than two decades, and the blasting is still going on today. It's time to find out who did this. It's time for some figurative heads to roll at the bridge district.



marin independent journal 6/2/92



Feds Close Lead-Tainted Parkland

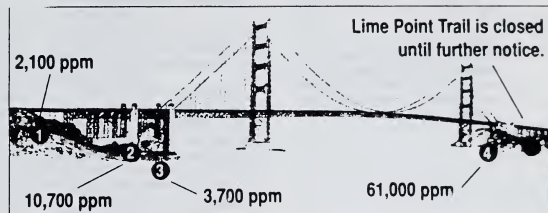
Fort Pt. bluff, in SF may join a Marin trail on 'closed' list

By John R. Moses
and Susan Herbert

San Francisco Independent/
Pan Asia Venture Capital Corp.

State toxics control officials want a patch of federal parkland on the San Francisco side of the Golden Gate Bridge closed to the public — along with an already-closed trail to the Marin anchorage on Lime Point — while state lead experts study evidence of lead contamination from Golden Gate Bridge paint sanding.

State officials also want a popular Fort Point picnic area posted as off-limits to picnickers due to a high lead reading.



The area's lead content registered more than seven times the federal limit for soil that children should be allowed to touch.

Lead is especially hazardous to children ages 5 and under. A small amount of lead — the size of a few grains of sand — can do irreparable damage to developing nervous systems.

The report on lead tests conducted for bridge officials found moderate and high levels of tainted soil beneath and beside the historic span, and re-

sulted in a fishing area at Lime Point beneath the North Tower being fenced off Thursday.

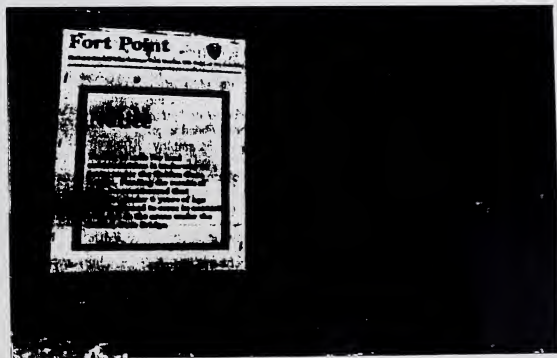
The Golden Gate Bridge, Highway and Transportation District's tests were conducted in response to an ongoing *San Francisco Independent* investigation of lead contamination, which found that land at Fort Point and by the bridge's Marin County approach and tower were moderately to highly contaminated with lead.

But bridge district and

- 1.) Trail east of bridge.
- 2.) Lighthouse Keeper's bluff, Fort Point.
- 3.) Lighthouse Keeper's Lawn, picnic area.
- 4.) Lime Point, north bridge anchorage.

Golden Gate National Recreation Area officials were pretty much on their own Thursday to

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gure out which tainted areas should be closed, as they awaited a formal advice letter from the state toxics and health agencies.

The popular Lime Point trail in Marin County was completely closed by the GGNRA after consultation with Marin Headlands rangers, said GGNRA Safety Officer Lance Lewis. Chain-link fencing was put across the parking lot Thursday afternoon, and signs will be posted today declaring the area temporarily off-limits.

The scenic trail leads to the ridge's north tower, which also was closed off — due to lead levels 61 times higher than recommended levels at its base. Previously, Lewis said, the tower was to be closed, but rangers said fishermen often bring their children to the site, and the GGNRA didn't want to risk having children in the area until more is known about the soil contamination.

For now, the GGNRA does not plan to close off the lawn at Fort Point. Lewis said the samples showing high lead levels there were taken at the base of the rocky area at the rear of the lawn. He said sanding was done 20 years ago in that area, and that posting a warning on the lawn seemed unnecessary.

The contaminated sand at the base of the rock, however, will be dealt with, Lewis said.

GGNRA officials are planning more tests for areas away from the bridge to make sure areas such as Crissy Field are free of contaminated grit and paint chips.

State experts study issue

Golden Gate Bridge officials Thursday fenced off the quarter-acre of land beneath the span in Marin due to levels of toxic lead measuring 61,000 parts-per-million, which is 61 times the 1,000 parts-per-million lead standard federal and state officials consider hazardous.

State officials say they are acting only on sites that registered lead contamination above 10 times the state's definition of a lead hazard, or sites where people are very likely to sit on the contaminated soil.

Stephen C. Davis of Health Science Associates, the laboratory commissioned by the bridge district to do the soil tests, recommended in his report that the situation warranted immediate development of an assessment plan.

Although the report did not indicate the sources of the lead, the bridge itself is the prime suspect.

A 20-year program of sand-blasting the bridge's old, lead-based paint is now nearing an end.

"We just have about a year's worth of work to do," said Bob Warren, manager of the Golden Gate Bridge as he surveyed the anchorage area in Marin on Thursday.

Warren said the painters were taking precautions to prevent any lead from drifting, using tarps as a buffer to contain the blasting grit.

"All the dust gets caught in the tarp," he said.

As he spoke, clouds of grit billowed out from under midspan of the bridge and curled up around the pedestrian walkway.

The California Department of Toxic Substance Control has held "informal discussions" with a Golden Gate Bridge safety official, but no meeting between the various regulatory agencies involved in reviewing the park contamination is planned yet, said Barbara Cook, site mitigation branch chief of the state's toxics department.

A picnic table site near Lime Point in Marin, and a bench area just down the road from the picnic site were not deemed in need of cautionary postings by the state, despite registering lead levels just below 3,000 parts-per-million — three times the safety threshold for adult human exposure and six times the limit for children.

The state officials want a temporary fence around a sandy bluff above Fort Winfield Scott at Fort Point, one of 10 areas among the 17 sampled that registered as contaminated at levels considered hazardous by federal standards.

Toxics officials have also called in a childhood lead expert from the state Health Department for an opinion on the potential dangers of the tainted land to children who play on it.

Three sites tested have a lead content above 500 parts-per-million, exceeding the state's recommended safety limit for children, but below 1,000 parts-per-million. Lead is especially harmful to children if breathed or ingested through hand-to-mouth contact.

Lewis, of the GGNRA, picked the spots tested by the Emeryville-based contractor, testing most of the locations the *Independent* had sampled earlier.

The test report, however, did not include a soil sample from the North Viaduct tower base, which in the *Independent's* April 15 sampling registered at near-astronomical levels of 510,000 parts-per-million, or just over 50 percent lead content.

A tower across the access road from that spot — directly under the bridge approach — registered at a much lower 10,500 parts-per-million.

That sample was not taken from one area at the base of the tower, but instead represented a composite sample of soil taken every 60 feet on each side of the paved road beside the tower.

The composite method of sampling is meant to represent the likely average contamination level of an area, rather than focusing on just one area, which may or may not contain a "hot spot" of dangerous contamination.

GOLDEN GATE

Signs warn of lead

Warning signs have been posted at both ends of the Golden Gate Bridge cautioning sightseers with young children there could be an unhealthy amount of lead in the soil, the result of decades of sandblasting of lead-based paint.

Bridge manager Bob Warren said Wednesday it will be another week before they know the extent of contamination, but the signs were posted on the recommendation of the San Francisco Public Health Department.

After a meeting Friday, we put up signs warning that "you may shouldn't come in contact with the dirt," Warren said. "The fear is that they will get paint chips in their mouths."

Since 1970, bridge workers at a cost of about \$10 million have been sandblasting the bridge with a white silica-based paint that does not contain lead. The process is part of the district's continual battle against rust and corrosion.

The prospect of lead contamination of the soil at the approaches to the bridge was brought up by a San Francisco newspaper, which took samples and reported measurements several times higher than what is allowed at playgrounds.

The warning signs have been posted at areas accessible to the public at the ends of the bridge. Lead levels in the concentrations of the soil are not expected to be a health hazard.

According to a report for the Golden Gate Bridge District released yesterday, surface soils at the lower base registered lead levels more than 60 times that needed to qualify as hazardous waste. The soils.

High-traffic areas were also detected at a heavily used grassy picnic area near Fort Point.

Soils exceeding the hazardous waste standard were found in 10 of 17 sites tested within the vicinity of the Golden Gate Bridge. The lead levels were also detected at a heavily used grassy picnic area near Fort Point.

Emergency laboratory Health Sciences Associates, found lead levels of 1,000 parts per million in soil at the north tower. Soil containing lead with 1,000 parts per million would have to be declared hazardous waste if it were trucked away. Anything above 500 is deemed unsafe for children, said a spokesman. Lead is believed to have contaminated the soil from years of sandblasting lead paint from the bridge. Lead paint was last discontinued 20 years ago.

ONell said the Park Service will conduct additional tests at sites heavily used by the public but further away from the bridge, such as the west end of Crissy Field and Horeshee Cove east of Fort Baker. "Fortunately, the levels seem to drop off as soon as you get away from the bridge, but we want to confirm that the levels there are safe," he said.

By Susan Russell
Chronicle Staff Writer

Beach Near Gate Bridge Closing — Lead Danger

soils tested are immediately adjacent to the Line Point fishing area.

"This is not a place where we want to have children down in the sand," said Brian O'Neill, superintendent of the Golden Gate National Recreation Area.

Emergency laboratory Health Sciences Associates, found lead levels of 1,000 parts per million in soil at the north tower. Soil containing lead with 1,000 parts per million would have to be declared hazardous waste if it were trucked away. Anything above 500 is deemed unsafe for children, said a spokesman. Lead is believed to have contaminated the soil from years of sandblasting lead paint from the bridge. Lead paint was last discontinued 20 years ago.

A26 San Francisco Chronicle 5/15/92

BAY AREA

THURSDAY, MAY 28, 1992

The first part of the report discusses the
 importance of maintaining accurate records
 of all transactions. It emphasizes that
 proper record keeping is essential for
 the success of any business. The report
 then outlines the various methods used to
 collect and analyze data. It includes a
 detailed description of the experimental
 procedures and the results obtained. The
 data shows a clear trend towards
 improved performance over time. This
 suggests that the methods used are
 effective and reliable. The report
 concludes by summarizing the findings
 and providing recommendations for
 future research. It suggests that further
 studies should be conducted to explore
 the long-term effects of the methods
 used. The report is well-written and
 easy to read. It provides a clear and
 concise summary of the research.



Report finds serious contamination at Lime Point

Independent Journal reporter

"We do not want to take any chances until we can determine what kind of response is necessary, so we felt it prudent to close off the area at Lime Point immediately east of the bridge," said Brian O'Neill, superintendent

From page A1

Lead-based paint and primers sandblasted from the bridge are the likely source of the contamination, authorities said.

In spite of evidence of contamination, War-

In a 14-page report released Wednesday, independent consultants Health Science Associates of Emeryville said new tests revealed "evidence of significant contamination in the surface soils in some areas of the Golden Gate Bridge."

In a 14-page report released Wednesday, independent consultants Health Science Associates of Emeryville said new tests revealed "evidence of significant contamination in the surface soils in some areas of the Golden Gate Bridge."

Lead testing of soil under the Marin tower of the span at Lime Point showed levels 61 times the limit for hazardous waste, according to the analysis by, the soil testing company hired by the Golden Gate Bridge

"We want to finish what we need to do to protect the bridge," he said.

Lead, which can cause brain damage and developmental disabilities if ingested, is particularly dangerous for children. Warning signs posted earlier this month will remain, and O'Neill plans to order more testing of high-use public areas, including Crissy Field in San Francisco.

The professional soil analysis was ordered immediately after a San Francisco newspaper investigation found a number of contaminated areas in the public parklands, particularly areas under the bridge. Lead

O'Neill and Bridge Manager Bob Warren said trails and other public areas at Lime Point, sometimes used as a fishing beach, will be fenced off to the public indefinitely while authorities develop a response plan.

Lime Point was one of 17 sites tested by the consultants. They also found lead contamination within four feet of a picnic table on the north side of the bridge, around Fort

readings from the new samples were lower than initial tests taken by the *San Francisco Independent* newspaper in April, Warren said.

The highest reading at the Fort Point area on the San Francisco side was 10,700 parts per million.

■ A paved trail on the east side of the bridge on the south approach had a reading of 2,100 ppm.

■ A proposed picnic area on the south side along a paved path had a reading of 790 ppm.

■ The access road under the bridge near the north approach vista point showed a

■ A paved road under the bridge on north side had a reading of 10,500 ppm.

Bridge and recreation area officials forwarded the results to Marin County and San Francisco health authorities and consult with the state Environmental Protection Agency and the state Department Health Services on an endangerment assessment to determine what, if anything, will be done.

"We are not alarmed, but we recognize there are areas where there is high concentration, and we want to work with regulatory agencies to do what is necessary," Wren said.



May 13, 1992

GOLDEN GATE BRIDGE REACTS TO REPORTS OF LEAD CONTAMINATION

On Tuesday, May 5, 1992 the, "San Francisco Independent" reported that it had tested the soil beneath the Golden Gate Bridge, and found that the soil contains lead at levels many times what state and federal environmental agencies consider hazardous. As a result of this report, the District initiated a series of meetings with representatives of the U.S. Army and the Golden Gate National Recreation Area (GGNRA). Jointly, a plan was developed to conduct soil sampling in identified areas using strict Environmental Protection Agency (EPA) approved sampling and analysis methods. This sampling plan was designed to emphasize the more heavily visited areas where the opportunity for visitor exposure is the greatest. Sampling was conducted on Friday, May 8, 1992 under the direction of an independent Certified Industrial Hygienist. The results of these tests will be reviewed by District officials, the GGNRA, the U.S. Army and State toxics authorities. Based on this data, decisions will be made as to the next step in the process...stay tuned!

10TH ANNUAL EMPLOYEES' PICNIC



As you know, the date for the 19th Annual Employees' Picnic is set for Saturday, September 26, 1992 at the Stafford Lake County Park, Novato.

Those employees interested in working on the Committee to plan and organize the annual picnic should call Jan Tarantino, Office of the General Manager, on Ext. 2236 by the end of May.

PHOTOGRAPHS AVAILABLE FOR PURCHASE

As announced during the evening of the Third Annual Employees' Recognition Banquet which was held on Saturday, April 11, 1992 at the Presidio Officers' Club, an 8" X 10" colored group photograph is available for \$15.00. If you are interested in purchasing this group photograph, please complete the form provided below and mail the completed form along with your check to Aida Santiago in the Office of the General Manager. If you have any questions, please call Aida on Ext. 2212.



Picture Perfect



Please send me _____ 8" X 10" group photograph(s) at \$15.00 each. Enclosed is a check in the amount of \$_____ made payable to: Golden Gate Bridge District.

Name: _____

Department: _____ Ext. _____



GATE GAB



May 13, 1992

MOTHER OF BRIDGE OFFICER RECEIVES "MOTHER OF THE YEAR" AWARD

Oakland Mayor Elihu M. Harris presented the "1992 Oakland Mother of the Year" Award to community leader Mae E. Upshaw during a special ceremony hosted by the Oakland Office of Parks and Recreation on Saturday, May 9, 1992 beginning at 2:00 p.m. at the Morcom Amphitheater of Roses. Mae Upshaw is the mother of three grown children, one of whom is Bridge Officer Marva Robinson. Marva has been working for the Bridge District as a Bridge Officer since August of 1988. She has two children, Melodie who is 4 1/2 years old and Moneque who is 6 months old.



This program has been in effect since 1954, and Marva's mother's name will be engraved on the sidewalk, along with the other honorees, located in the Morcom Amphitheater of Roses which features 5,000 rose bushes of over 400 spectacular varieties.

EMPLOYEE NEWS



Congratulations to Harvey Katz, Associate Planner, and wife, Mary, who are proud parents of their new baby boy, Spencer Federico, born on April 25, 1992, weighing in at 6 lbs., 11 ozs.

Congratulations to Paul Linder, Bridge Officer, and wife, Arney, who are proud parents of their new baby boy, Adam Wesley, born on May 7, 1992, weighing in at 6 lbs., 10 ozs.

Retired Painter Bob Gregonis has moved from his former residence in Marin County to his newly-constructed home in Mendocino where he is using his new microwave which was given to him by his fellow employees. His new microwave is a lifesaver since his wife and family are still at the former residence making those final moving arrangements and Bob can't cook. Hooray for microwaveable TV dinners!



Golden Gate gets lead warning signs

By Donna Horowitz

Independent Journal reporter

Signs warning of possible lead contamination beneath the Golden Gate Bridge were to be posted Friday night to advise weekend visitors to stay away.

Lead is particularly dangerous for children under age 6, who should not be allowed to have contact with it, said Ray Baxter, director of public health for San Francisco.

Young children are susceptible to brain damage and developmental disabilities if they ingest lead, he said. "We don't want children playing there in the soil until we know the results (of testing)."

Public health officials warned of danger

Thursday after a soil test conducted by the San Francisco Independent newspaper showed lead contamination along trails and other public areas under the span.

The suspected source of the contamination is lead-based paint used on the bridge 30 years ago, which has been sandblasted off.

Soil sampling beneath both ends of the bridge was to have been completed Friday. Lab results are due back in 10 to 14 days.

The California Environmental Protection Agency and California Department of Health Services are overseeing the testing and interpretation of the results.

When the lab tests are done, the health officials will decide what type of public access should be allowed and whether any

abatement procedures are necessary, Baxter said.

Although the newspaper survey reported that some areas near a popular trail under the bridge registered at 500 times the federal limit for such toxic waste, Baxter said he has never heard of anyone getting lead poisoning from going beneath the bridge.

But health officials are taking the lead poisoning threat seriously because new information shows the levels needed to get someone sick are much lower than previously thought.

In a recent study of 1,200 San Francisco kids, health officials found that one in 10 children suffer from lead poisoning.

And the sick children are spread across all economic groups.

San Francisco Independent GGNRA tests for Lead

By John R. Moves and
Susan Herbert

Golden Gate National Recreation Area officials plan to test some of the soil under the Golden Gate Bridge for lead contamination after a *San Francisco Independent* investigation uncovered elevated lead levels on park land beneath the famous span.

Golden Gate National Recreation Area (GGNRA) Superintendent Brian O'Neill said the GGNRA is working in cooperation with the U.S. Army and the Golden Gate Bridge District to conduct soil tests on the

areas tested by the newspaper, as well as on adjacent park areas.

The tests on five park areas in San Francisco and Marin showed contamination levels between six and eight times the federal standard on two San Francisco sites.

The tests also indicated that a toxic hot spot, beneath the span in Marin County exists under a roadside support tower. That area tested at 500 times the federal standard.

The agencies' representatives met Wednesday and agreed that testing was neces-

sary, O'Neill said. Still unresolved is the issue of which agency will foot the bill for the tests, or whether the agencies will split the tab.

O'Neill said he hopes the testing is wrapped up by the end of the week, so that test results will be available by early next week.

New areas to be tested include the lawn near the Fort Point parking lot, where, O'Neill said, people often come into contact with the soil.

Lead levels between 6,100 parts per million (ppm) — six times the federal and state classification of hazardous waste — and 8,200 ppm — eight times the 1,000 ppm standard — were found on the San Francisco side of the span on public access lands.

California health officials consider soil containing lead levels of 500 ppm to be hazardous, and recommend that it be sealed off or removed to pro-

Lead

from page 1

tect children, who can be easily poisoned if they ingest lead dust through breathing or hand-to-mouth contact.

In Marin County one soil sample registered 4,700 ppm, while land at the base of a north approach support tower registered a whopping 510,000 ppm — more than 50 percent lead — which is 500 times above the hazardous waste level.

On April 15, the *Independent* sampled a total of six areas near or on trails or scenic overlooks to soil depths between three and eight inches, and took the samples to a San Francisco laboratory for lead content analysis.

Paint chips found on the surface of the San Francisco side were also analyzed for lead content, and were found to contain lead at an average of 2,500 ppm.

One area, a fishing spot between the north wall of the fort and San Francisco Bay, tested at just 400 ppm lead. That patch of land is hard, flat and rocky, occasionally washed by large waves and mostly swept of loose topsoil by strong winds.

Test Results

The federal soil standard for hazardous waste is 1,000 Parts per million lead.

Hiking trail above Fort Point, SF	6,100 parts-per-million
Sandy overlook above fort, 1 — 4"	8,000 parts-per-million
Sandy overlook above fort, 4 — 8"	8,200 parts-per-million
Trailside opposite lighthouse, Marin	4,700 parts-per-million
Base of Marin approach tower	510,000 parts-per-million

Tests reflect only the spots sampled and are not composites of the entire area.

See Lead, page 7

May 10, 1992

San Francisco Independent

SF Issues Bridge Trail Warning

By Susan Herbert
and John R. Moses

The San Francisco Health Department on Friday recommended that park users avoid trails beneath the Golden Gate Bridge until tests sponsored by federal and state agencies determine whether there is serious lead contamination on the land.

Health officials issued the advisory after the *San Francisco Independent* printed the

results of tests performed on soil samples gathered by a newspaper staffer from park land below the span—tests that indicated that moderate to heavy contamination may exist below and next to the bridge.

Results of the government-sponsored tests should be available early this week.

Years of painting and sanding, as well as an ongoing renovation project that saw most of the bridge sandblasted of old

lead-containing paint, may have caused lead readings that, in the *Independent's* tests, registered between six and eight times the federal hazardous waste standards for lead contamination on the park areas.

Officials from the Golden Gate National Recreation Area (GGNRA), Golden Gate Bridge District and City Health Department met Friday at 3 p.m. to discuss the responsibilities of each agency, Health Depart-

ment spokeswoman Wendy Iwata said.

The GGNRA, U.S. Army and Golden Gate Bridge, Highway and Transportation District had met earlier this week and agreed to test for lead in the soil around the bridge. Testing officials, however, did not contact the *San Francisco Independent* to find the exact locations of the soil samples taken in April.

See Lead, page 2

Lead from page 1

The meeting, attended by bureaucrats from the federal, state and local agencies, was closed to the press and public, despite requests from Bay City News Service and the *San Francisco Independent* that reporters be allowed to attend.

Those in attendance were not elected public officials, and in the eyes of the city were not covered under the state Brown Act—the law

that provides for open government meetings.

Iwata said the meeting was closed to the public because it was the first between the agencies involved, and the officials would have a more open dialogue with no reporters in attendance.

Dick Fogel, co-owner of Bay City News Service, said the issue is a serious public health matter. He took his complaint unsuccessfully to the City Attorney's Office.

San Francisco Independent
May 12, 1992

Bridge Trail Test Results Due Soon

By Susan Herbert

The director of the city's Public Health Department announced that soil sampling for lead contamination under the Golden Gate Bridge has been completed and test results will be available in 10 to 14 days.

Officials from the Golden Gate Bridge, Highway and Transportation District, and the Golden Gate National Recreation Area worked with the United States Army on the testing procedure.

The soil testing was undertaken in response to the *San Francisco Independent's* investigations that revealed extremely high levels of lead along the trails and in the sandy overlooks under the bridge, including one spot in Marin County that registered lead contamination at 500 times the federal level for hazardous waste.

Most areas tested registered between 4,000 and 8,000 parts-per-million lead, four to eight times the 1,000 ppm level that, according to the state and federal governments, constitutes hazardous waste.

The California Environmental Protection Agency will oversee the test evaluations and any lead abatement that might be necessary if their tests confirm the results of the *Independent's* investigation.

The Golden Gate Bridge District (GGBD) and the GGNRA are paying for the soil tests.

A warning sign has been posted by the bridge district along the trail to Fort Point under the bridge, cautioning that children under 6 years old should not come in contact with the soil pending completion of the soil tests.

city's Public Health Department on Friday, staff from the GGNRA, the bridge district, California Environmental Protection Agency, California Health Services, Marin Health Services and the city's Health Department met to share information on the contamination.

Soil tests taken by an *Independent* staffer on five park areas in San Francisco and Marin showed contamination levels between six and eight times the federal standard on two San Francisco sites and two Marin

See Bridge, page 6

5. Bridge the Gap

The first step in building a bridge is to identify the gap. This is often done by comparing the current state of affairs with the desired state. Once the gap is identified, the next step is to develop a plan to bridge the gap. This plan should be based on a thorough understanding of the gap and the resources available to bridge it. The plan should also be flexible enough to allow for changes as more information is gathered.

Once a plan is developed, the next step is to implement it. This involves putting the plan into action and monitoring progress. It is important to be flexible and adjust the plan as needed. Once the gap is bridged, the next step is to evaluate the results. This involves comparing the current state of affairs with the desired state and determining if the gap has been successfully bridged.

6. Bridge the Gap

The second step in building a bridge is to identify the gap. This is often done by comparing the current state of affairs with the desired state. Once the gap is identified, the next step is to develop a plan to bridge the gap. This plan should be based on a thorough understanding of the gap and the resources available to bridge it. The plan should also be flexible enough to allow for changes as more information is gathered.

Bridge

from page 1
ites.

Also, paint chips gathered from beneath the span on the San Francisco side tested positive for lead.

The tests also indicated that a toxic hot spot beneath the span in Marin County exists under a roadside support tower. That area tested at 500 times the federal standard.

The 90-minute meeting of agency officials, which was closed to the public, was the first time the agencies had met in a joint session to deal with a common problem.

"It was a technical meeting and where they (the officials) had to

get acquainted with one another," Health Department spokeswoman Wendy Iwata said, explaining why the meeting was not open.

Ray Baxter, director of the city's Public Health Department, told reporters after the meeting, that the principal issue of concern was the risk of lead poisoning to children.

The two factors under consideration were the areas of lead concentration and the accessibility of those areas to children.

Until the *Independent's* own testing, it had not occurred to any of the agencies to test the soil around the bridge even though sandblasting of the lead-paint coating of Golden Gate Bridge has been underway since 1970.

"Even a small amount of lead puts a child at risk," said Dr. Robert Schlag of the California Department of Health's Childhood Lead Poisoning Prevention Program. "A thumb-nail-size piece of lead paint could do serious damage."

Even pets can be at risk in contaminated areas. Veterinarians' diagnoses of lead-poisoned pets sometimes lead to the discovery that the children in the family are also affected by lead poisoning, said Schlag.

Lead ingested or inhaled by young children can irreparably harm their developing nervous and skeletal systems.

The Centers for Disease Control has set 10 micrograms per deciliter of

lead in blood as the safety threshold for children. That figure translates into the amount of lead the size of a grain of sand in a child's bloodstream.

Although the GGBD stopped using lead-based paint in the late 1960s, the sandblasting has removed layers of old lead-based paint and left paint chips in the soil and sand under the bridge.

Those paint chips, clearly visible in the soil and sand, may be the source of the lead contamination.

Bridge workers at risk

In 1982 the GGBD was cited by California Occupational Safety and Health Agency for not enforcing safety practices among its workers who were

involved in the sandblasting and repainting.

Cal OSHA issued a special order at that time, directing the GGBD to comply with safety standards. One order was to have the bridge workers' blood tested every six months and report the findings to Cal OSHA.

Bob Warren, manager of the Golden Gate Bridge, said the workers had been tested as ordered but the results have not been sent to Cal OSHA for years.

"As I remember it they told us they didn't need the reports any longer," Warren said, adding that ongoing medical exams reveal no elevated lead levels in the workers' blood.

If after a few years of submitting the medical reports, Cal OSHA deemed the GGBD was complying with the special order, the agency could have asked the district to discontinue reporting the results, said Richard Stephens, spokesman for Cal OSHA.

Cal OSHA is currently reevaluating the safe threshold of lead in the workers' blood. As it stands, workers with blood lead levels of 40 micrograms per deciliter require medical monitoring and those with levels of 60 must be taken off the job.

The Centers for Disease Control has considered 25 micrograms per deciliter as a safe threshold for adults.

marin IJ
may 13, 1992
EDITORIALS

Good move by bridge district

THE GOLDEN Gate Bridge District is to be commended for its quick reaction to revelations that soil beneath the bridge might be contaminated with lead from paint that has been sand-blasted off the bridge.

The district has posted signs in accessible areas underneath the bridge advising visitors to stay away. That's a remarkable step for a bureaucracy to take.

Reports of possible lead contamination came from tests conducted by the San Francisco Independent newspaper. The district would have been justified to dispute the findings and take no action. It didn't.

State agencies have conducted their own soil contamination tests. It will be several days before those results are known. The bridge district would have been within its right to do nothing until test results are in.

But breaking with conventional damage control techniques, the bridge district didn't wait. It moved forcefully ahead and posted the warning signs.

It is sad state of affairs when it is unusual for a public agency to do the right thing. Posting the warning signs shows that the bridge district is concerned about the health of people who might be around the base of the bridge.

Way to go bridge district. Here's hoping that when the results of the state tests are announced — no matter what they are — district officials display the same forthright

Santa Rosa Press
Democrat 5/19/92

Scare stories

Editor: Santa Rosa is worried about the cost of removing lead-contaminated soil. Golden Gate Bridge District officials are also, only at a much higher cost.

I served in the Navy when lead-based paint was more common than beans. A good part of your time you were either painting or chipping. If you received a reprimand, the penalty was usually x number of hours of extra duty. Ninety percent of the time I was more painting or chipping.

When I left the Navy, I started plumbing and retired after 33 years. I

begin in the south, where the water service from the city main to the property line was lead pipe. The water line in the house was copper with solder joints composed of lead and tin. The drain lines were cast iron with molten lead joints that were caulked

There seems to be a little too much panic, and the media help it along. Environmentalists have too much power. They do not hesitate to close factories or soak the taxpayer by exorbitant disposal means. I am referring to this hauling the soil to a distant site, encasing it in concrete, then a plastic coating and burying it.

Unless the person is going to lie down in this soil and eat handfuls of it, I don't see that much danger.

THOMAS M. BATES
Santa Rosa

THE JOURNAL OF THE ROYAL ANTHROPOLOGICAL INSTITUTE

Volume 100, Part 1, 2000

Published by the Royal Anthropological Institute of Great Britain and France

Subscription prices (per volume) are £100 net (US \$150 in the USA, Canada and Mexico) for institutions and £30 net (US \$45) for individuals ordering direct from the publishers and certifying that the journal is for their personal use. The subscription price of the volume includes postage by air to the USA, Canada and Mexico. Orders, which must be accompanied by payment, may be sent to a bookseller or to the publishers, Taylor & Francis Ltd, One Gunpowder Square, London SE11 1DF, UK.

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Old lead cleanup proving expensive

Lead

SR, others must clear paint taint

By CAROL BENFELL
and BOB NORBERG
Staff writers

Routine sandblasting to remove old paint is causing expensive problems in Sonoma County and throughout the Bay Area.

In Santa Rosa, city officials will spend \$26,000 instead of the usual \$500 to remove sandblasted material from the Regional Sewage Treatment Plant. In San Francisco and Marin, soil is being analyzed at both ends of the Golden Gate Bridge after decades of spraying with lead-based paint.

Earlier this year, Santa Rosa allocated \$51,000 to repair and recoat the cover of one of the huge \$2 million vats, called digesters, which break down solid waste at the Sewage Treatment Plant on Laguna Road.

The contractor sandblasted the old paint and then tested the sand and paint-flecked debris for lead, a routine step required by law, said Dan Carlson of the city Utilities Department.

But the level found clearly exceeded the levels considered safe. The digester, built in 1975, apparently had been coated with a lead-based paint before the paint became illegal that same year, Carlson said.

"I'd dealt with asbestos tile on old floors and leaking gas tanks underground, but this was a new one," Carlson said. "I knew it was

going to be expensive."

In fact, removal of the sandblasted material will increase the cost of the job by more than 50 percent. Instead of loading the 30 tons of material onto a truck and hauling it to the county dump, the city will have to give the waste special handling to meet state and federal laws.

The sand-and-paint material will be trucked to the state hazardous waste landfill at Kettleman City, at a cost of \$2,500. The landfill will charge the city \$13,000 to dispose of the stuff, because it must be embedded in cement and given a protective coating before it is buried.

Because the lead contamination could cause health problems, the city must follow a special list of procedures, including having employees shower and dispose of their clothing after each day's work, Carlson said.

Periodic blood tests to make sure lead has not entered workers' bodies will cost an estimated \$1,100. Special employee showers, at a cost of \$1,300, must be installed because the wash water could have traces of lead in it.

Another \$5,000 will be spent to put an industrial hygienist at the site to monitor the removal of the sandblasted material and make sure cleanup is performed according to regulations.

The same kind of problem — lead paint remnants from sandblasting — is plaguing the Golden Gate Bridge District.

In the next few days, the district

See Lead, Page B5

The San Francisco Department of Public Health warned the public yesterday to avoid contact with soils in the vicinity of the bridge until further testing can determine the extent of the problem.

Soil samples from five publicly accessible spots below the north and south approaches to the bridge revealed lead levels of between 4,700 and 510,000 parts per million. A level of 1,000 parts per million would qualify as hazardous waste under federal guidelines.

Continued from Page B1

will begin testing soil at the approaches to the Golden Gate Bridge to determine if it has been contaminated by two decades of sandblasting lead-based paint.

The prospect of contamination was raised by a San Francisco newspaper, which reportedly took soil samples with levels of 8,000 and 6,100 parts per million on the south side and 4,700 and 510,000 parts per million on the north, said Bob Warren, bridge manager. The state considers 1,000 parts per million safe.

Warren said he ordered the testing to settle questions about the validity of the samples — 510,000 parts per million is 50 percent solid lead.

If lead has contaminated the soil, the district then will have to determine if the soil poses a public health hazard.

"There's a certain amount of lead out there. There has to be," Warren said. "But it's land that is inaccessible to the public. The north end is poison oak and the south end is cliffs."

To combat rust, the bridge was coated in its famous International Orange color with a lead-based paint when it was built in the '20s and '30s, and that signature color has been used ever since.

Between 1937 when it opened and 1970, maintenance crews would chip off the paint and rust and repaint with the original lead-based paint. Beginning in 1970, workers began sandblasting off the lead-based paint and repainting with a vinyl, non-lead primer and paint.

SF Chronicle
May, 1992

Soil Under Gate Bridge High in Lead

By Sabin Russell
Chronicle Staff Writer

The National Park Service has ordered immediate tests of lead levels in soils below the Golden Gate Bridge after samples tested by a San Francisco laboratory found apparently high levels of contamination.

The highest contamination was found underneath the steel structure supporting the Marin County approach to the bridge. The tests were performed by Pacific Environmental Laboratory on soil samples supplied by the San Francisco Independent newspaper.

Although lead paint has not been used on the 55-year-old span in 20 years, sandblasting of older paint layers may have contaminated the surrounding soils.

Bridge Sanding Poisons Parkland

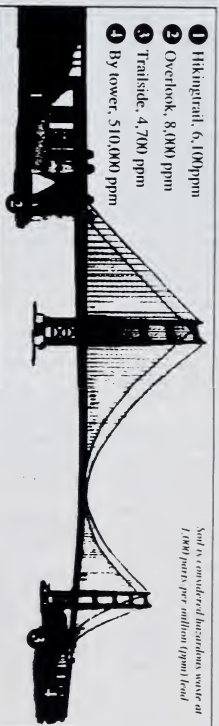
Officials swap blame for lead at Fort Point & Marin trailsides

By John R. Moses and Susan Herbert

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Venture Capital Corp.

Recreational areas beneath the Golden Gate Bridge used regularly by thousands of people are so poisoned with lead that one area near a popular trail registered 500 times the federal limit for toxic waste, and city health officials say they would seal off the land if they

- 1 Hiking trail, 6,100ppm
- 2 Overlook, 8,000 ppm
- 3 Trailside, 4,700 ppm
- 4 By tower, 510,000 ppm



Soil is considered hazardous when at 1,000 parts per million (ppm) lead

The red dots show places found to be contaminated, and the lead levels found by the San Francisco Independent's lead test.

had the authority. Open sandblasting of lead-based paint and primers is the most likely contamination source on the public access land, which is used daily for hiking,

strolling and picnicking by people of all ages from around the world.

The soil tests were paid for as part of an ongoing series of tests on public areas by the San

Francisco Independent, and were conducted with soil samples collected by an Independent staff member on April 15.

Based on results of the

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Bridge

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land, much of which is also under state jurisdiction.

"I would say immediate action must be taken and the areas should be cordoned off right now," said Bill Lee, head of the city's Public Health Department's Toxics Division.

The state Department of Health's Toxics Division will evaluate the contamination, said spokesperson Jill Singleton, but may refer the matter to Marin and San Francisco counties on a non-emergency basis.

"The state concentrates its resources on the larger facilities" and on pollution caused by known generators of hazardous wastes, such as

The agency refers "smaller, more localized problems to the counties..." said Singleton. "This is not an emergency situation. We've just learned about this lead problem, but it's been there for 40 years."

Federal park officials say the contamination is the state's problem. Bruce O'Neill, director of the Golden Gate National Recreation Area (GCNRA), said Friday he thinks that the state Department of Transportation (Caltrans) is probably responsible for any contamination on the land beneath and beside the bridge.

O'Neill said lead is a common problem, and he feels the GCNRA has no specific duty to notify people who may wander onto the Fort Point overlook or other contaminated land on the easement, via the landscaped

Caltrans spokesman Greg Bayol, however, said the Caltrans easement ends at the Toll Plaza area, and does not seem to extend into the tested area beneath the Marin side of the bridge.

As of Monday afternoon, the land was still open to the public with no warning signs about the contamination, and no agency from any branch of government is planning any immediate action to warn the public.

Whose problem is it?

Regardless of which government agency must clean up or seal off the land, the effects of the lead will immediately impact those who use the land for recreation.

In addition, taxpayers will ultimately pick up the tab for a cleanup if

sandblasting the Golden Gate Bridge with no control over where the lead particles fall.

For one parent interviewed on Friday, who let his children play in the sandy, rocky area above Fort Point during day outings, the news simply means having to find another place for the children to play.

Also having second thoughts about using the land is local photographer Allen Mort, who went unexpectedly Friday to the overlook that tested eight times above the federal level for toxic waste to see about getting a shot of the sunset.

"I never really thought of it before," he said, looking up to the towering bridge structure. "But it could be a serious problem," he said, adding that he won't have a picnic there any

Lead is a heavy metal that can cause developmental damage to children if ingested even in moderate concentrations, such as through hand-to-mouth contact with lead paint chips or tainted soil tracked onto a rug or clothing. It is also poisonous to adults in high concentrations.

Although the Golden Gate Bridge District has not used lead-based paint since the late 1960s, it is the residue of the old paint that is leaving its toxic legacy.

A complete sandblasting of the bridge began in 1970 and it is now 99 percent complete, according to Bob Warren, Golden Gate Bridge manager.

The sandblasting is removing rust, plus layer after layer of the old lead-based paint, and leaving a good measure of large and small paint chips in the sand and soil beneath the structure.

The San Francisco side of the bridge is finished and the only sandblasting left is at the base of the Marin tower at the water's edge, and the Marin approach, which spans over land.

"We have another year or so to go," Warren said.

Warren said the air pollution control inspectors were monitoring the sandblasting and have found the bridge in compliance with health and safety regulations.

Jack Bean, an inspection manager for the enforcement division for Bay Area Air Quality Management, said the monitoring done by his department was solely for grit.

"Lead is not an issue for the bridge," Bean said. "There's no longer lead in the paint, so our testing is not for lead."

Bean said his tests have certified that the bridge is using approved grit and that the emission levels are in compliance with legal standards. The state has certified the bridge's sandblasting work, he said.

Richard Stephens, spokesman for Cal OSHA, the agency that investigates issues surrounding employees' job-related health problems, said he could not recall an investigation into

the bridge's sandblasting project in recent years.

"There was a question about lead in 1982 and whether the legal standards would apply to the bridge district," he said. "And at that time, we issued a special order that the bridge be in compliance."

Those requirements include baseline blood tests for employees, monitoring of blood levels, use of respirators, and showering facilities. If blood levels exceed a certain limit, the workers must be taken off the job until blood levels are down or the job no longer involves the health hazards of lead.

Lee, of the San Francisco Health Department's toxics bureau, is concerned about the health of workers sanding the structure, what kind of protective gear they wear and whether their blood was tested for lead levels.

Bridge Director Warren said that the employees have regular medical check-ups and their blood level is monitored. The test results are confidential and not available to the public.

"We've had no problems," Warren said. "Their blood levels are always at low levels."

Warren said the workers wear full sandblasting gear with respirators. They are not required to shower after their shifts.

Painting of the Golden Gate Bridge is a continuous process because of the corrosion caused by the salty fog. Now, with the outlawing of lead-based paint, the bridge uses a water-based inorganic zinc-based primer with an acrylic top coat of paint.

Whether the problem belongs to the Golden Gate National Recreation Area or the Golden Gate Bridge will have to be determined.

Although the land belongs to GGNRA, the bridge district owns an easement directly under the bridge and some distance to the sides of the bridge.

"We don't know if there is any abatement to be done at this point," said Warren.

All areas tested were covered with sandy soil that contained throughout small red chips of paint and primer.

One sandy area at the Fort Point overlook, which has a surface contamination level eight times the hazardous waste standard, contained sand that was moist and the color of powdered hot chocolate mix, and left reddish streaks on the sampler's scooping tool.

The contamination increased there from 8,000 ppm to 8,200 ppm in a sample from four to eight inches below the surface.

Some public access areas around Fort Point also have thousands of large, heavy paint chips scattered around on the surface of the sand and exposed rock under the bridge.

Several of those chips were gathered and tested for lead content, registering at an average lead content of 2,500 parts-per-million (ppm).

While that number would be one-and-a-half times the hazardous limit for soil lead content, it is a relatively low lead content for a solid paint chip when compared with many old paints, which contain as much as 600,000 ppm of lead.

However, sandy soil at the base of a support tower near a Fort Cronkhite trail in Marin County registered at 510,000 ppm within the first few inches of soil.

Moderate to very high levels

Only one of six soil samples from public access areas beneath the Golden Gate Bridge on both the San Francisco and Marin anchorages registered below federal hazardous waste limits. The state recommends that soil containing more than 500 parts-per-million of lead be removed or sealed off to prevent exposure to children.

The Marin trailside sample taken below the bridge — containing 500 times the hazardous waste standard of 1,000 parts per million lead — is at the edge of a narrow road beneath the bridge.

Bay Bridge Lead Hazard

By John R. Moses
and Susan Herbolt

*San Francisco Independent
Press and Venture Capital Corp*

The Port of San Francisco is seeking money from the state to help pay for a \$1 million cleanup of extreme lead contamination on old piers beneath the Bay Bridge, which were exposed for two decades

to lead-based paint particles from bridge sandblasting operations.

The evidence of lead contamination from Bay Bridge maintenance raises the possibility that beaches and hillsides around the Golden Gate Bridge could also be contaminated with lead due to decades of sandblasting and repainting.

The contamination most likely happened in the 1940s when bridge crews conducted open sandblasting and sand, contaminated by lead-based primer paint, drifted down and settled more than an inch thick atop the three pier buildings.

The state's Department of Transportation (Caltrans) is in negotiations with port officials

to determine how much we're going to participate in the cleanup of "sand and abrasive materials" that settled on the roofs of Piers 24, 26 and 28, Caltrans spokesman Greg Bayol said Monday.

However, Bayol said Caltrans officials believe shipbuilding operations that once operated in the vicinity may

have contributed to the contaminated materials on the roofs.

Barbara Cooper, the Port of San Francisco's senior industrial hygienist, said the sandy soil atop the warehouses is overgrown with weeds and poses no danger as long as it is

never heard anything mentioned about any possible contamination."

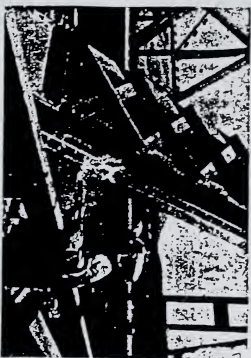
Jim Kennedy, of the popular Boondocks Restaurant, was surprised not to have heard anything about a likely toxic clean-up.

"They watch the water constantly to make sure businesses don't allow any sewage into the bay," he said. "I didn't know there were other problems."

The port is not the only agency with land in the lower Rincon Hill area possibly affected by lead paint fallout from the Bay Bridge. The city has several projects on tap for the area including:

- a park planned for an area recently cleared of railroad tracks near the bridge anchorage;
- expansion of the Embarcadero roadway in the area of the bridge and planting of palm trees there;
- development of a new cruise terminal and hotel near the anchorage.

There was also a rejected proposal for a hotel and marina at the site of Pier 24, a condemned structure with a rooftop lead reading of be-



A Bay Bridge maintenance worker sandblasts on the Carqueez Straths.

Bridge

from page 1

left alone. The contaminated rooftop was discovered by maintenance workers seeking to do some roofing work submitted that the layers of sand and debris might have settled from the bridge.

"I really felt strongly that they shouldn't do any work over there" until tests were taken, Cooper said.

Cooper said the highest reading was 8,200 parts-per-million (ppm) of lead, more than eight times the 1,000 ppm level for total lead content at which most government agencies classify soil as hazardous waste if removed.

The sand also tested high for the amount of lead that could leach from the soil if it is exposed to acid rain or decomposing citrus fruit, meaning it will have to be disposed of in a special landfill. That will add to the expense.

Caltrans first offered to clean the sand off the buildings, but it became apparent after the tests that the cleanup would be a big job, requiring toxics specialists and special vacuuming of the type used for asbestos removal.

Rincon Hill moving upscale

Spanking new condominium developments rise just to the east of the bridge anchorage, intermixed with old warehouses and sleek office buildings.

A few lunchtime eateries dot the shore's landscape.

The DeLancey Street rehabilitation complex, with its restaurant and available ground-floor retail space, is also nearby. The waterfront to the west of the anchorage is also getting busier, thanks to the removal of the quake-damaged Embarcadero Freeway.

The few people asked were not aware of any contamination from the bridge's past.

"There's a lot of dust from the traffic and the bridge," said Lucy Mattingly, an architectural assistant at a firm located directly under the

See Bridge, page 11

Environmental reviews were conducted before the city's approval of the Embarcadero roadway project, according to Deputy City Attorney John Cooper, who is handling negotiations between the Port Authority and Caltrans.

The result of the soil tests in those reviews were not available Monday from the Department of Public Works.

Jim Cheng of the department confirmed that tests were taken but said he did not have specifics. Cheng said the department is studying possible mitigation measures.

Dust stirred up by earth-moving projects on land that tests as contaminated would contain the toxic metal, which is known to cause brain damage and other illnesses to children even at relatively low ingestion levels, and illness to adults at higher exposure levels.

The lead-based primer paint used on the bridge from after World War II until at least the 1960s was regularly sand-blasted off the bridge as part of normal bridge maintenance.

The state switched to a different primer at some point, probably in the 1960s, said Bayol of Caltrans.

What many call the most beautiful span in the world may offer problems similar to those of the Bay Bridge.

The Golden Gate Bridge, with its anchorage over Fort Point and beach areas may have left the soils and buildings contaminated with lead from years of sand-blasting.

"No one has looked at it (the lead problem) yet," said Jim Milestone, Ocean District ranger for the National Park Service. "It's probably an issue we'll be looking into."

Marshall Beach, just under the bridge, is a wild area and rarely used by the public, Milestone said. The manager of the Fort Point facility could not be reached for comment.

Milestone said that any work or testing for lead contamination would take a back seat to more-urgent problems, such as known asbestos in some buildings and cleanup of hazardous wastes on the beach that is periodically dumped in violation of the law.

Supervisor Willie Kennedy, one of the city's representatives to the

Golden Gate Bridge and Highway District, said no lead issues have come before the panel during her time on it, but said she will investigate the possibility of lead contamination from that span.

Golden Gate may be contaminated with lead

Health officials warn public to avoid area

By Ingrid Becker

Independent Journal reporter

Reports of lead contamination beneath the Golden Gate Bridge prompted public health officials to warn people Thursday to avoid the area.

The advisory, issued by the San Francisco Public Health Department, was prompted by a soils test conducted by the San Francisco Independent newspaper showing lead contamination along public trails and other access areas beneath the span.

Sandblasting of lead-based paint used on the bridge 30 years ago is suspected as the source of the contamination, but authorities stressed that lead from vehicle exhaust is a common hazard near public roadways.

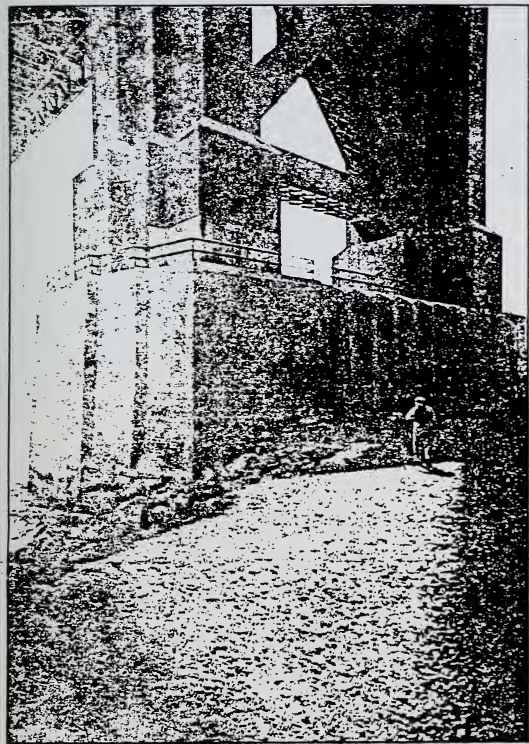
Bridge and federal recreation authorities ordered their own soil samplings, and results are expected next week.

San Francisco health officials have no authority to close the federal land, but said they felt compelled to warn the public of the potential exposure hazard.

"We are recommending that until further testing is done and the results are in, that people should stay away from the area under the bridge," said Wendy Iwata, a spokeswoman for the San Francisco Health Department. The warning also applies to the Marin County side.

The San Francisco-based newspaper reported that in some areas the lead near a popular trail under the bridge registered 500 times the federal limit for such toxic waste. The paper reported that areas around Fort Point have thousands of large, heavy paint chips scattered around the surface of the sand and exposed rock under the bridge.

See Bridge, page A15



U photo: Scott Henry

WARNING ISSUED: Fisherman walks under bridge area, which officials now are warning people to avoid following a report about lead contamination

Bridge

From page A1

Soil samples taken April 15 on both sides of the bridge were analyzed at Pacific Environmental Laboratory as part of an ongoing series of tests in public areas by the Independent.

Lead is a heavy metal that can cause developmental damage to children if ingested, even in low concentrations. Lead can also poison adults.

Sandblasting to remove the lead-based paint last used on the Golden Gate Bridge in the 1960s is all but complete.

Bridge manager Bob Warren said sandblasting on the south end of the bridge was completed in 1973, and said remaining work is on the north tower and a small area of the Marin County approach. That work is expected to be completed within the next year.

The bridge district is cooperating with

the Golden Gate National Recreation District and the Army, which also owns land adjacent to the bridge, to identify the extent of any contamination.

"We don't think there's any problem, and none of the regulatory agencies have been concerned," Warren said.

To date, district painters involved in the work to remove rust and layers of the old lead-based paint have tested normal in routine blood screenings conducted every six months since 1982.

Brian O'Neill, superintendent for the National Park Service, said federal authorities will embark on an independent analysis of the newspapers' findings. The extent of any cleanup would be based on those results, he said.

"We're not sure there is a hazard until we know all the facts and until we've done the sampling and analysis correctly and looked at all the implications," he said.

Bay Cities News Service contributed to this report.

APPENDIX C
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Various Agencies 3200
1991 Seismic Retrofit Agency
Scoping List
Includes names not appearing
in other categories

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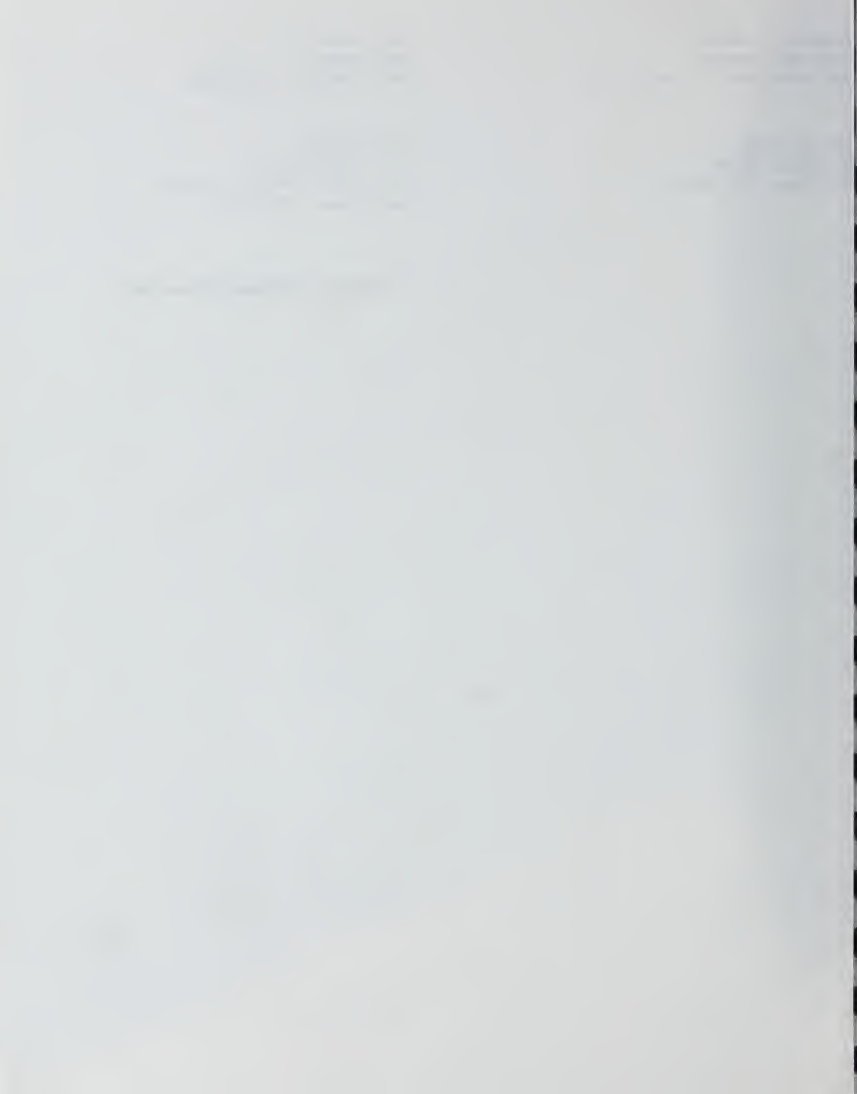
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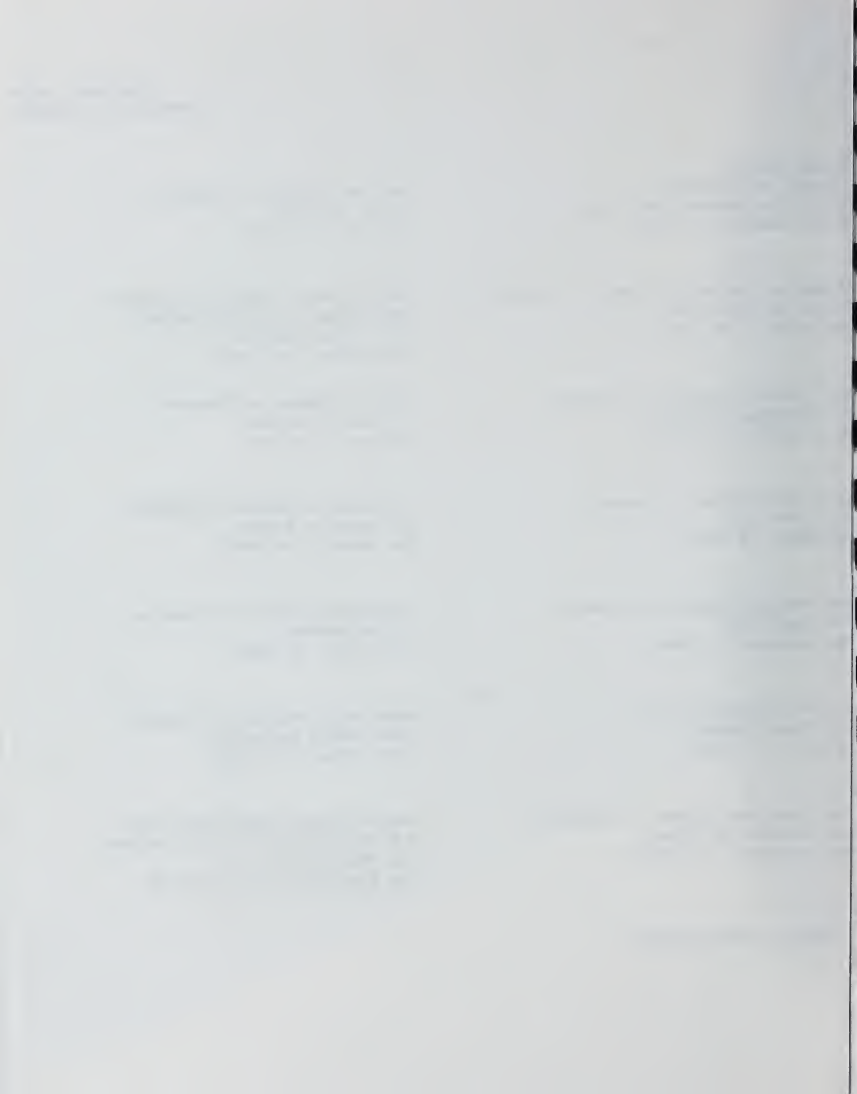
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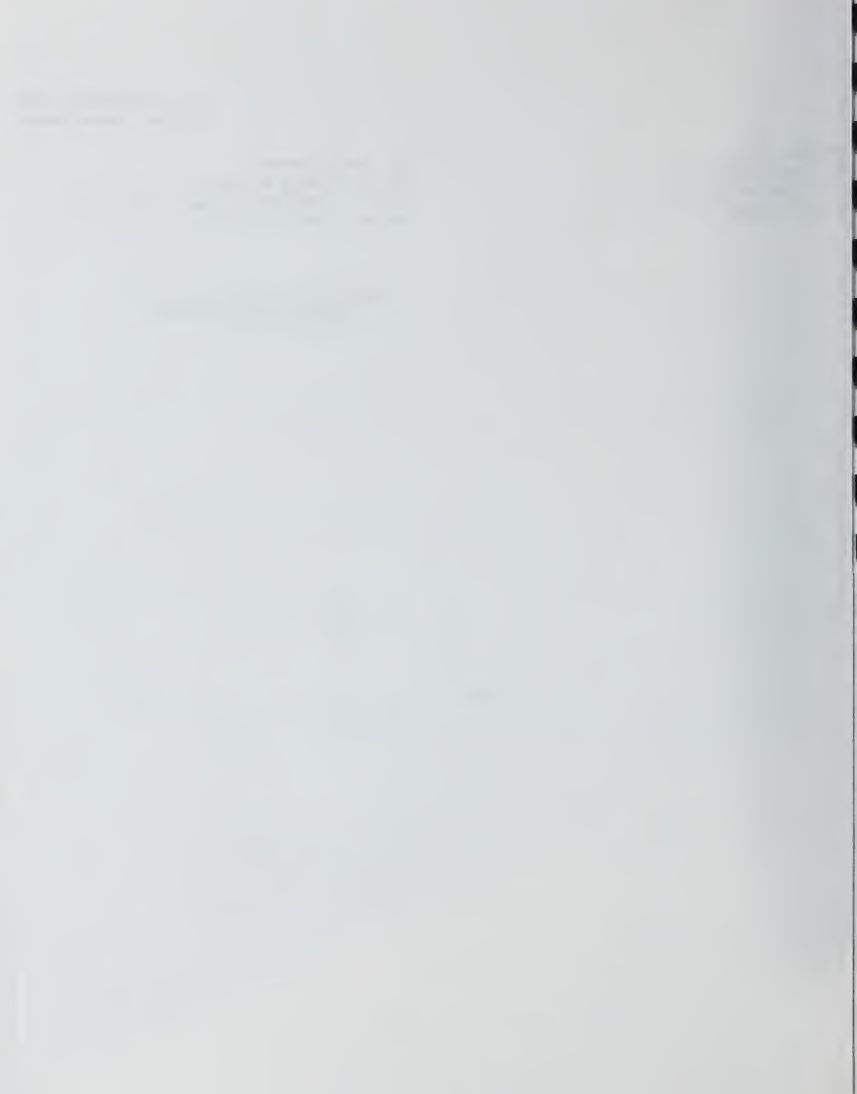


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1. The first part of the report discusses the background of the project and the objectives of the study.

2. The second part of the report describes the methodology used in the study and the data collected.

3. The third part of the report presents the results of the study and discusses the implications of the findings.

4. The fourth part of the report concludes the study and provides recommendations for future research.

5. The fifth part of the report provides a summary of the study and its findings.

6. The sixth part of the report provides a list of references and a list of figures and tables.

7. The seventh part of the report provides a list of appendices and a list of abbreviations.

8. The eighth part of the report provides a list of acknowledgments and a list of contact information.

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